Project Manual

Cell 10 Construction
Scott Area Landfill

Waste Commission of Scott County
Scott County, Iowa

October 2025

Project I.D.: 25S040.00

Solving our clients' toughest science and engineering challenges.

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SECTION 00 11 13
NOTICE TO BIDDERS

WASTE COMMISSION OF SCOTT COUNTY
SCOTT AREA LANDFILL
CELL 10 CONSTRUCTION

The summary of information included herein is provided for convenience:

Project Title:	Cell 10 Construction
Project Description:	Provide excavation and associated earthwork, utility installation, and construction of Cell 10 and its adjacent stormwater ponds.
Project Location:	Scott Area Landfill, 11555 110th Avenue, Davenport, IA 52804
Public Hearing:	Thursday, December 11, 2025 at 5:00 P.M. local time
Issuing Office:	Foth infrastructure & Environment, LLC andrea.lorenz@foth.com
Bid Opening:	Monday, December 1, 2025 at 11:00 A.M. local time
Bid Award:	Thursday, December 11, 2025 immediately following public hearing
Submit Bids To:	www.questcdn.com
Project Dates:	Commencement: February 1, 2026 Substantial Completion: July 1, 2026 All Work Complete for Final Billing: July 31, 2026

General Notice

Waste Commission of Scott County (Owner) is requesting electronic Bids for **Cell 10 Construction (Project).**

Electronic bids for the Project will be received until December 1, 2025 at 11:00 a.m. local time via the website Quest CDN (questcdn.com). No alternate electronic bid submittals or paper bids will be accepted. Bids will not be able to be electronically submitted after the deadline.

Bids will only be received and accepted via the online electronic bid service through www.QuestCDN.com. To access the electronic bid form, download the Bidding Documents and click on the online bid button on the bid advertisement page. Prospective bidders must be on the Planholder List through QuestCDN for bids to be accepted.

The Project includes the following work:

> Provide excavation and associated earthwork, utility installation, and construction of Cell 10 and its adjacent stormwater ponds at the Scott Area Landfill, Waste Commission of Scott County, 11555 110th Avenue, Davenport, Iowa, 52804.

Owner anticipates that the Project's total bid price will be approximately $2,000,000.

Work on the Project shall commence on or about February 1, 2026, weather permitting, and shall be substantially complete by July 1, 2026.

Obtaining the Bidding Documents

Information and Bidding Documents (Advertisement of Bids, Instructions to Bidders, Bid Form, Bid Bond, Notice of Award, Agreement Between Owner and Contractor, Notice to Proceed, Performance Bond, Payment Bond, Contractor's Application for Payment, Certificate of Substantial Completion, General Conditions of the Contract, Supplementary Conditions, Drawings and Specifications) for the Project can be obtained at no charge from the designated website or as a printed copy.

Designated website:

- Quest CDN - www.questcdn.com referencing Quest ID# 9917965

Downloads of the Bidding Documents require the user to register for a free membership at www.QuestCDN.com. A Contractor may view the Bidding Documents at no cost prior to deciding to become a Planholder. Registering as a Planholder is recommended for all prime Contractors and Subcontractors as Planholders will receive automatic Notice of Addenda and other Bidding Document updates via QuestCDN. Contact QuestCDN Customer Support at (952) 233-1632 or info@QuestCDN.com for assistance in membership registration, downloading digital project information, and QuestCDN VirtuBid online bid submittal questions.

Downloading electronic Bidding Documents is strongly encouraged; however, paper copies of the Bidding Documents are available by contacting Foth Infrastructure & Environment, LLC. A fee of Two Hundred and Fifty Dollars ($250.00) per paper set will apply. This fee is refundable, provided the following conditions are met: (1) The Bidding Documents are returned complete and in a good usable condition. (2) They are returned within fourteen (14) calendar days after the award of the Project. An individual must email andrea.lorenz@foth.com in advance to reserve a paper copy.

It is the Bidders responsibility to obtain any and all addenda.

Pre-bid Conference

A Pre-bid Conference for the Project will be held on November 5, 2025 at 11:00 a.m., local time at the Scott Area Landfill located at 11555 110th Avenue, Davenport, Iowa, 52804**.** Attendance at the Pre-bid Conference is encouraged but not required.

Bid Security

Each Bidder shall accompany its bid with bid security as defined in Iowa Code Section 26.8, as security that the successful Bidder will enter into a Contract for the work bid upon and will furnish after the award of Contract a corporate Surety Bond, in a form acceptable to the Owner, for the faithful performance of the Contract, in an amount equal to one hundred percent (100%) of the amount of the Contract. The Bidder's security shall be 5% of the bid amount and shall be submitted as follows:

1. Authentic digital bid security may be submitted electronically, along with the bid, through the QuestCDN VirtuBid system. A scanned copy of paper bid security is not authentic digital bid security. Surety2000 is an example of authentic digital bid security.

   OR

2. Paper bid security may be delivered to the Scott Area Landfill, 11555 110th Avenue, Davenport, Iowa, 52804, **and must be received by the Owner prior to the deadline for receipt of bids.** Paper bid security shall be in the form of a cashier's check or a certified check drawn on an FDIC insured bank in Iowa or on an FDIC insured bank chartered under the laws of the United States; or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States; or a Bid Bond on the form provided in the Contract Documents with corporate Surety satisfactory to the Owner. Paper bid security shall be submitted in a sealed envelope labeled with the Bidder's name, Project name, and "Bid Security".

Any bids received without bid security by the designated bid opening time will be rejected. The bid shall contain no condition except as provided in the specifications.

The Owner reserves the right to defer acceptance of any bid for a period of thirty (30) calendar days after receipt of bids and no bid may be withdrawn during this period.

Public Bid Opening

Electronic bids will be publicly opened online during a MS Teams meeting on December 1, 2025, at 11:00 a.m. local time. Contact Andrea Lorenz at andrea.lorenz@foth.com to be included in the MS Teams meeting or access via Teams (Meeting ID 272 805 278 367 3, passcode K8Lt7Qp7).

The Owner reserves the right to reject any or all Bids and waive or not waive any informalities in the Bids received.

Public Hearing

A public hearing will be conducted on the plans, specifications, form of contract and estimate of cost at a meeting of the Commission to be held at the Scott Area Recycling Center, 5640 Carey Avenue, Davenport, IA 52807, at 5:00 p.m. on December 11, 2025, at which time and place any person may appear and file objections to the proposed plans, specifications, form of contract and estimated costs for said public improvements. Bids previously received for the Project will be presented to and considered by the Commission immediately after the termination of said hearing. The Commission may award a Contract at said meeting, or at such other time and place as shall then be announced.

Instructions to Bidders

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

Bid Advertisement Issue Date: October 20, 2025

4933-7873-9313-1\24426-000

SECTION 00 11 53

QUALIFICATIONS STATEMENT

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business's organizational structure:

Form of Business:	☐ Sole Proprietorship ☐ Partnership ☐ Corporation		
☐ Limited Liability Company ☐ Joint Venture is comprised of the following companies:			
	1.		
	2.		
	3.		
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?	☐ Yes ☐ No ☐ Pending		

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1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

1.04 Provide information regarding the Business's officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—SAFETY

3.01 Provide information regarding Business's safety organization and safety performance.

Name of Business's Safety Officer:		
Safety Certifications		
Certification Name	Issuing Agency	Expiration

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3.02 Provide Worker's Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH

ARTICLE 4—FINANCIAL

4.01 Provide information regarding the Business's financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business's most recent financial statement:		☐ Attached
Date of Business's most recent audited financial statement:		☐ Attached
Financial indicators from the most recent financial statement		
Contractor's Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor's Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

ARTICLE 5—SURETY INFORMATION

5.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:	
Surety is a corporation organized and existing under the laws of the state of:	
Is surety authorized to provide surety bonds in the Project location?	☐ Yes ☐ No
Is surety listed in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? ☐ Yes ☐ No	
Mailing Address	

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(principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 6—INSURANCE

6.01 Provide information regarding Business's insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?			☐ Yes ☐ No
Does provider have an A.M. Best Rating of A-VII or better?			☐ Yes ☐ No
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—CONSTRUCTION EXPERIENCE

7.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

7.02 Provide information regarding the Business's previous contracting experience.

Years of experience with projects like the proposed project:

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As a general contractor:		As a joint venturer:		
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:				
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No				
Been barred from contracting by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No				
Been released from a bid in the past 5 years? ☐ Yes ☐ No				
Defaulted on a project or failed to complete any contract awarded to it? ☐ Yes ☐ No				
Refused to construct or refused to provide materials defined in the contract documents or in a change order? ☐ Yes ☐ No				
Been a party to any currently pending litigation or arbitration? ☐ Yes ☐ No				
Provide full details in a separate attachment if the response to any of these questions is Yes.				

7.03 List all projects currently under contract in Schedule A and provide indicated information.

7.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business's experience with projects similar in type and cost of construction.

7.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business's key leaders as well.

ARTICLE 8—REQUIRED ATTACHMENTS

8.01 Provide the following information with the Statement of Qualifications:

A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.

B. Certification of Business's safety performance if required by Paragraph 3.02.

C. Financial statements as required by Paragraph 4.01.

D. Attachments providing additional information as required by Paragraph 7.02.

E. Schedule A (Current Projects) as required by Paragraph 7.03.

F. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 7.04.

G. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 7.05.

H. Additional items as pertinent.

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This Statement of Qualifications is offered by:

Business: _____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(date signed)

(If Business is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

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Schedule A – Current Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent		Safety Manager	Quality Control Manager
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent		Safety Manager	Quality Control Manager
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent		Safety Manager	Quality Control Manager
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

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Schedule B – Previous Experience with Similar Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

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Schedule B – Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager		Quality Control Manager
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager		Quality Control Manager
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager		Quality Control Manager
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

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Schedule C – Key Individuals

Project Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Project Superintendent			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

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Safety Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Quality Control Manager			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

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SECTION 00 21 13

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. Issuing Office – The office from which the Bidding Documents are to be issued, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement for Bids. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.

2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.

2.05 Electronic Documents

A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in PDF (Portable Document Format or .pdf) format. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the

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documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.

1. Electronic Documents that are available in native file format include:

a. CAD files of the Drawings.

2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.

3. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.

4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:

A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.

B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.

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C. Bidder's state or other contractor license number, if applicable.

D. Subcontractor information.

E. Other required information regarding qualifications.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

4.01 A non-mandatory Pre-bid Conference will be held at the time and location indicated in the Advertisement for Bids. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.

4.02 Information presented at the Pre-bid Conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the Pre-bid Conference. Information presented, and statements made at the Pre-bid Conference will not be binding or legally effective unless incorporated in an Addendum.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 Site and Other Areas

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

5.02 Existing Site Conditions

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:

a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.

b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.

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c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. Underground Facilities: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 Other Site-related Documents

A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:

1. Documents related to the Landfill including Construction Quality Assurance Reports for existing landfill construction projects are available on the Iowa Department of Natural Resources website Doc DNA.

B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.

C. The other Site-related documents are not part of the Contract Documents.

D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.

5.04 Site Visit and Testing by Bidders

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

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B. Bidder may not access the Site unaccompanied by the Owner or Engineer.

C. A Site visit is scheduled following the Pre-bid Conference.

D. Bidders visiting the Site are required to arrange their own transportation to the Site.

E. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the following Owner or Engineer contact for visiting the Site. Bidder must conduct the required Site visit during normal working hours.

F. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

G. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

H. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

I. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 Owner's Safety Program

A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.06 Other Work at the Site

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 Express Representations and Certifications in Bid Form, Agreement

A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in

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connection with the Bid. Bidder should review these representations and certifications and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.

B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:

A. Submit via email to Andrea Lorenz, Foth Infrastructure & Environment, LLC, andrea.lorenz@foth.com

7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than fourteen days prior to the date for opening of Bids may not be answered.

7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price (determined by adding the base bid without alternates, optional items, or allowances) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the

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Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

9.01 The dates by which the Work is to be (a) substantially completed and (b) ready for final payment are set forth in the Agreement.

9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND "OR EQUAL" ITEMS

10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

11.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work with the Bid:

A. Geosynthetics (HDPE geomembrane, geocomposite drain net, geotextile), underdrain piping, leachate collection piping, road aggregate, stormwater structures.

11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable

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substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12—PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable", or the number zero as allowed in the electronic Bid submittal.

12.02 The Bid shall be submitted electronically as directed in the Bidding Documents.

12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.

12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.

12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.

12.06 A Bid by an individual must show the Bidder's name and official address.

12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.08 All names must be printed in ink below the signatures.

12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

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12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.

12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 Unit Price

A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

D. Alternates, if shown on Bid Schedule, will not be used in the comparison of Bids.

13.02 Allowances

A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 14—SUBMITTAL OF BID

14.01 Submittal of the Bid shall conform to the instructions in the Notice of Public Hearing, Letting, and Advertisement of Bids.

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ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

15.01 An unopened Bid may be withdrawn by an appropriate document duly executed and delivered to the Owner prior to the date and time for the opening of Bids. Upon receipt of such notice, the Bid will be not be considered.

15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.

15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 Evaluation of Bids

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A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21—SALES AND USE TAXES

21.01 Chapters 422 and 432, Iowa Administrative Code, as amended, requires the payment of Sales or Use Tax on materials used in construction. The Contractor shall prepare, and require their subcontractors to prepare, Iowa Department of Revenue Form 35-002, following all directions on said form. The Contractor shall file executed copies of Form 35-002 with the Owner with the application for final payment. Sales or Use Taxes shall be included in the Bid Prices.

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SECTION 00 41 13

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to: **Waste Commission of Scott County, 11555 110th Avenue, Davenport, Iowa, 52804**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

1.03 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. Bid Schedule (Section 00 41 43)

C. List of Proposed Subcontractors (see Section 00 43 36, Tabulation of Subcontractors);

D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;

E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;

F. Required Bidder Qualification Statement with supporting data.

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Total Bid Price (Lump Sum and Unit Prices)*

A. Bidder will perform the following Work at the Total Bid Price (total of all lump sum and unit price bids):

$_____

B. Bidder acknowledges that:

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1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
2. estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete as defined in Section 00 65 16 and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

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4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

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2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
    a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
    b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
    c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
    d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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BIDDER hereby submits this Bid as set forth above:

Bidder:

_____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: (if applicable) _____

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SECTION 00 41 43

UNIT PRICE BID SCHEDULE

Provided for reference: Bid shall be submitted via the Bidding Website QuestCDN.com

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Extension
1	Mobilization/Demobilization	lump sum	1		
2	Erosion Control	lump sum	1		
3	Clearing and Grubbing	lump sum	1		
4	Common Excavation SUDAS CLASS 10 - Cell 10	cubic yards	208,000		
5	Structural Fill - Cell 10 Subbase/Perimeter Road	cubic yards	28,000		
6	Placement of Soil in Stockpile - Cell 10	cubic yards	180,000		
7	Underdrain Trenches Without Pipe	lineal feet	2,965		
8	Underdrain Trench With Lateral Pipe and Cleanout	lineal feet	648		
9	Underdrain Trench With Header Pipe	lineal feet	390		
10	Underdrain Sump and Riser	lump sum	1		
11	Load, Haul, and Place Underdrain Drainage Material	cubic yards	598		
12	Structural Fill for Underdrain Trench	cubic yards	741		
13	Compacted Clay Liner	cubic yards	27,705		
14	Smooth HDPE Liner	square feet	190,273		
15	Textured HDPE Liner	square feet	183,748		
16	Geocomposite Drain Net	square feet	374,021		
17	Leachate Collection Perforated Piping and Geotextiles	lineal feet	551		
18	Leachate Collection Solid Piping	lineal feet	353		
19	Load, Haul, and Place Leachate Coll. Trench Drainage Material	cubic yards	276		
20	Protective Layer	cubic yards	13,853		
21	Gas Header Piping	lineal feet	1,054		
22	Gas Header Stubouts	each	6		
23	Gas Header Connection, Valve	lump sum	1		
24	Perimeter Road With Owner-Provided Shingles	square yards	2,073		
25	Perimeter Road With Macadam Stone	square yards	2,073		
26	Culvert under Perimeter Road	each	1		
27	Dewatering	lump sum	1		
28	Topsoil Stripping - Stormwater Basins	cubic yards	5,200		
29	Excavation SUDAS CLASS 10 - Stormwater Basins	cubic yards	12,448		
30	Structural Fill - Stormwater Basins	cubic yards	10,905		
31	Placement of Soil in Stockpile - Stormwater Basins	cubic yards	1,543		
32	Riprap and Geotextile - Stormwater Basins	lump sum	1		
33	Culvert between Stormwater Basins	each	1		
34	Stormwater Basin Outlet Structure	lump sum	1		
35	Site Restoration	lump sum	1		
				Total Bid Price (Items 1-35) =	

Notes: The listed number of units for bid items are for comparison purposes only and are not guaranteed. Payment will be based on the actual number of units determined by methods described in Section 01 22 05.

ALTERNATE BID ITEMS					
Item No.	**Description**	**Unit**	**Estimated Quantity**	**Bid Unit Price**	**Bid Price**
A-6	Underdrain Drainage Blanket	square feet	269,152		
A-14	Smooth HDPE Liner- White	square feet	190,273		
A-15	Textured HDPE Liner - White	square feet	183,748		

OPTIONAL BID ITEMS					
Item No.	**Description**	**Unit**	**Estimated Quantity**	**Bid Unit Price**	**Bid Price**
A	Excavation within future Cell 11- Winter	cubic yards	500,000		

ALLOWANCES					
Item No.	**Description**	**Unit**	**Estimated Quantity**	**Bid Unit Price**	**Bid Price**
A	Underdrain Trenches SUDAS CLASS 12 - Bedrock Removal	cubic yards	37		
B	Underdrain Trenches - Additional Trenches	lineal feet	1,000		
C	Subgrade- Replacement of Unsuitable Material	cubic yards	2,000		

SECTION 00 43 13

BID BOND (PENAL SUM FORM)

Bidder Name: Address *(principal place of business)*:	**Surety** Name: Address *(principal place of business)*:
Owner Name: Waste Commission of Scott County Address *(principal place of business)*: 11555 110th Avenue Davenport, IA 52804	**Bid** Project *(name and location)*: Cell 10 Construction Scott Area Landfill 11555 110th Avenue, Davenport, IA 52804 Bid Due Date: December 1, 2025 11am
Bond Penal Sum: Date of Bond:	

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

Bidder	Surety
(Full formal name of Bidder)	*(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature) (Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title:	Title:

Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.

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1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
   3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
   3.2. All Bids are rejected by Owner, or
   3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

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10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term “Bid” as used herein includes a Bid, offer, or proposal as applicable.

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SECTION 00 43 36

TABULATION OF PROPOSED SUBCONTRACTORS & SUPPLIERS

The following subcontractors will be utilized for portions of the project work. Changes shall not be made subsequent to the bid unless the change(s) is approved by the Owner.

Subcontractor/Supplier	Classification of Work	Estimated Dollar Amount

SECTION 00 51 00

NOTICE OF AWARD

Date of Issuance:			
Owner:	Waste Commission of Scott County	Owner's Project No.:	
Engineer:	Foth Infrastructure & Environment,	Engineer's Project No.:	25S040
Project:	Cell 10 Construction		
Contract Name:	Cell 10 Construction		
Bidder:			
Bidder's Address:			

You are notified that Owner has accepted your Bid dated _____ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Cell 10 Construction

The Contract Price of the awarded Contract is $_____. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

An electronic unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award.

☒ Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner three (3) counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): None.

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

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Owner: Waste Commission of Scott County

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Copy: Engineer

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SECTION 00 52 13

AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between **Waste Commission of Scott County** ("Owner") and _____ ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: **Earthwork; construction of the underdrain, composite liner, and leachate collection systems; construction of the stormwater basin; and any other components identified in the Cell 10 Construction Project Manual; at the Scott Area Landfill, 11555 110th Avenue, Davenport, IA, 52804.**

ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Cell 10 Construction at the Scott Area Landfill**

ARTICLE 3—ENGINEER

3.01 The Owner has retained **Foth Infrastructure & Environment, LLC** ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by **Engineer**.

ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work will be substantially complete as defined in Section 00 65 16 on or before **July 1, 2026**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **July 31, 2026**.

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4.05 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
   1. *Substantial Completion:* Contractor shall pay Owner **$600** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
   2. *Completion of Remaining Work:* After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **$600** for each day that expires after such time until the Work is completed and ready for final payment.
   3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

ARTICLE 5—CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item).

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities):

_____

[words]

$_____

[numerals]

For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

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ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **last** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
    a. **90** percent of the value of the Work completed (with the balance being retainage).
    b. **90** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **100** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **200** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Interest*

A. All amounts not paid when due will bear interest at the rate determined by Chapter 573, Iowa Administrative Code.

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ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

A. The Contract Documents consist of all of the following:
   1. This Agreement.
   2. Bonds:
      a. Performance bond (together with power of attorney).
      b. Payment bond (together with power of attorney).
   3. General Conditions.
   4. Supplementary Conditions.
   5. Specifications as listed in the table of contents of the project manual (copy of list attached).
   6. Drawings as listed in the table of contents of the project manual (copy of list attached).
   7. Addenda.
   8. Exhibits to this Agreement (enumerated as follows):
      a. Contractor's Bid.
      b. Tabulation of Subcontractors.
   9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
      a. Notice to Proceed.
      b. Work Change Directives.
      c. Change Orders.
      d. Field Orders.
      e. Warranty Bond, if any.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 *Contractor's Representations*

A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
   1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
   2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
   3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
   4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical

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conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
   1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
   2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the

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detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® Section 00 70 00, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

Owner:	Contractor:
Waste Commission of Scott County *(typed or printed name of organization)*	_____ *(typed or printed name of organization)*
By: _____ *(individual's signature)*	By: _____ *(individual's signature)*
Date: _____ *(date signed)*	Date: _____ *(date signed)*
Name: Bryce Stalcup *(typed or printed)*	Name: _____ *(typed or printed)*
Title: Executive Director *(typed or printed)*	Title: _____ *(typed or printed)*
	*(If **[Type of Entity]** is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*
Attest: _____ *(individual's signature)*	Attest: _____ *(individual's signature)*
Title: _____ *(typed or printed)*	Title: _____ *(typed or printed)*
Address for giving notices:	Address for giving notices:
11555 110th Avenue	_____
Davenport, IA 52804	_____
_____	_____
(If Waste Commission of Scott County is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	License No.: _____ *(where applicable)* State: _____

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SECTION 00 55 00

NOTICE TO PROCEED

Owner:	Waste Commission of Scott County	Owner's Project No.:	
Engineer:	Foth Infrastructure & Environment, LLC	Engineer's Project No.:	25S040
Contractor:		Contractor's Project No.:	
Project:	Cell 10 Construction		
Contract Name:	Cell 10 Construction		
Effective Date of Contract:			

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on January 5, 2026 pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement:

The date by which Substantial Completion must be achieved is **July 1, 2026**, and the date by which readiness for final payment must be achieved is **July 31, 2026**.

Before starting any Work at the Site, Contractor must comply with the following:

Coordinate site access with Owner.

Owner: Waste Commission of Scott County

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Date Issued: _____

Copy: Engineer

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SECTION 00 61 13

PERFORMANCE BOND

Contractor	**Surety**
Name:	Name:
Address *(principal place of business)*:	Address *(principal place of business)*:
Owner	**Contract**
Name: Waste Commission of Scott County	Description *(name and location)*:
Mailing address *(principal place of business)*:	Cell 10 Construction Scott Area Landfill 11555 110th Avenue, Davenport, IA 52804
11555 110th Avenue Davenport, IA 52804	Contract Price: $
	Effective Date of Contract:

Bond

Bond Amount:

Date of Bond:

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
(Full formal name of Contractor)	*(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
    3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within 5 business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within 10 business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
    3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
    3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
    5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
    5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
    5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond 7 days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within 2 years after a declaration of Contractor Default or within two years after the Contractor ceased working or within 2 years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this

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paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

    14.1. *Balance of the Contract Price* – The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

    14.2. *Construction Contract* – The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

    14.3. *Contractor Default* – Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

    14.4. *Owner Default* – Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

    14.5. *Contract Documents* – All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows: None.

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SECTION 00 61 14

PAYMENT BOND

Contractor	**Surety**
Name:	Name:
Address *(principal place of business)*:	Address *(principal place of business)*:
Owner	**Contract**
Name: Waste Commission of Scott County Mailing address *(principal place of business)*: 11555 110th Avenue Davenport, IA 52804	Description *(name and location)*: Cell 10 Construction Scott Area Landfill 11555 110th Avenue, Davenport IA, 52804 Contract Price: Effective Date of Contract:
Bond	
Bond Amount: Date of Bond: *(Date of Bond cannot be earlier than Effective Date of Contract)* Modifications to this Bond form: ☐ None ☐ See Paragraph 18	

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
(Full formal name of Contractor)	*(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
    5.1. Claimants who do not have a direct contract with the Contractor
        5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within 90 days after having last performed labor or last furnished materials or equipment included in the Claim; and
        5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
    5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
    7.1. Send an answer to the Claimant, with a copy to the Owner, within 60 days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
    7.2. Pay or arrange for payment of any undisputed amounts.
    7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have

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reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions

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16.1. *Claim* – A written statement by the Claimant including at a minimum:

16.1.1. The name of the Claimant;

16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;

16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;

16.1.4. A brief description of the labor, materials, or equipment furnished;

16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

16.1.7. The total amount of previous payments received by the Claimant; and

16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2. *Claimant* – An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3. *Construction Contract* – The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4. *Owner Default* – Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5. *Contract Documents* – All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

18. Modifications to this Bond are as follows: None.

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SECTION 00 62 76

APPLICATION FOR PAYMENT

GUIDELINES

1.0 PURPOSE AND INTENDED USE OF THE DOCUMENT

The Application for Payment is used to facilitate periodic progress payments to the Contractor for Work completed and for stored materials and equipment (referred to in this document as "Stored Materials"). For additional information regarding the Application for Payment, see EJCDC® Section 00 70 00, Standard General Conditions of the Construction Contract, Paragraph 15.01, and EJCDC® C–001, Commentary on the 2018 EJCDC Construction Documents.

2.0 APPLICATION FOR PAYMENT OVERVIEW

This document was prepared in Microsoft Excel due to the number of calculations involved in the preparation of the Application for Payment. The application consists of a Summary worksheet, and 3 supporting worksheets: Lump Sum worksheet, Unit Price worksheet, and Stored Materials worksheet.

2.1 *Summary Worksheet* — calculates the amount to be paid to the Contractor at the end of each Application for Payment period. This calculation imports numbers from the supporting worksheets to determine the value of the Work completed and Stored Materials, calculate retainage, and deduct amounts previously paid to determine the amount the Contractor should be paid for the current application period. Application periods are typically one month; however these periods may be extended when Contractor's efforts do not result in the billable completion of Work or storage of materials and equipment during the payment period.

2.2 *Lump Sum Worksheet* — calculates the total value for completed Work for which compensation is paid on a Lump Sum basis. The schedule of values included in this worksheet reflects a breakdown of lump sum Work items to which Contractor and Engineer have agreed, pursuant to Article 2 of the General Conditions. Costs for Stored Materials associated with lump sum items are included on this worksheet to calculate the total value for completed lump sum Work and associated Stored Materials. This total is exported to the Summary worksheet. Separate totals for Work Completed and for materials currently stored are also exported to the Summary worksheet for use in calculating the amount of retainage to be held for each.

2.3 *Unit Price Worksheet* — calculates the total value for completed Work for which compensation is paid on a Unit Price basis. The schedule of values included in this spreadsheet is typically a tabulation of Unit Price items from the Agreement. Costs for Stored Materials associated with unit price items are included in this worksheet to calculate the total value for completed Unit Price Work and associated Stored Materials. This total is exported to the Summary worksheet. Separate totals for Work Completed and for Materials Currently Stored are also exported to the Summary worksheet for use in calculating the amount of retainage to be held for each.

2.4 *Stored Materials Worksheet* — calculates the total value for materials and equipment that have been purchased and are being stored until they are incorporated into the Work. This worksheet adds materials and equipment to the worksheet as they are brought to the site and stored; such Stored Materials are then deducted from the Stored Materials worksheet total as they are incorporated into the Work, providing a running net value for the materials and equipment remaining in storage. The values of Stored Materials must be manually added to the Lump Sum or Unit Price line items. These do not automatically update when changes are made. The amount of materials remaining in storage is eligible for payment but must be tracked separately from Work completed since different retainage rates may apply to Work completed and Stored Materials.

3.0 Instructions for filling out the Payment Application form

3.1 Project-specific information is to be entered in the top portion (header) of the Summary worksheet. This same information will automatically be copied to the other worksheets to complete the headers on all other worksheets.

3.2 Outside of the header, data can be entered in non-shaded cells when the sheet is protected. Cells shaded light blue contain equations that will automatically transfer data from other cells or make calculations to complete the worksheet. Altering any of these cells can result in errors in the Application for Payment. It is recommended that the worksheets be protected at all times unless alterations are deliberately being made to the Application for Payment form other than to enter data. See Paragraph 4.0 below for information on Protection of Worksheets.

3.3 Enter information regarding each item in the Lump Sum and/or Unit Price worksheets. For Lump Sum projects, each item should represent an item in the schedule of values prepared by the Contractor and approved by the Engineer/Owner, breaking down the Lump Sum amount into measurable components. For Unit Price contracts, use numbers from the Agreement as the schedule of values. Specific information on the data to be entered into each column may be seen by clicking on the header description for that column. Similar comments may be seen for cells in the "Totals" row that indicates how the number is calculated and where this number is exported to another part of the spreadsheet. See the Commentary for additional information.

3.4 The equations in the Summary worksheet use numbers imported from both the Lump Sum and Unit Price worksheets. Projects will typically either use the Lump Sum or the Unit Price worksheet, but some projects may use both. If one of the worksheets is not used, it should be hidden and not deleted. If it is deleted, Users will need to correct the equations in the Summary worksheet by unprotecting the worksheet and editing the equations. To hide a worksheet, right click on the worksheet tab at the bottom of the worksheet and select "Hide." To unhide a worksheet, right click on any worksheet tab and select "Unhide," and then select the worksheet to unhide and click "Okay." This same process may be used to hide these Guidelines for Use.

4.0 Protection of Worksheets

4.1 The cells in this Workbook that create the forms or contain equations have been coded to "lock" the cells that should not be altered. It is recommended that the Workbook be Protected (cells locked) at all times unless it is necessary to add or delete rows. Directions for adding and deleting rows are provided in the next section. Passwords can be used to lock the Protect / Unprotect settings on spreadsheets, however the worksheets in this workbook do not require a password.

4.2 To unprotect a worksheet, click on the "Review" menu tab at the top of Excel, then click "Unprotect Sheet." To protect a worksheet, click on the "Review" menu tab at the top of Excel, then click "Protect Sheet." This will open a dialog box in which the User is allowed to select protection options. It is recommended that only the top two checkboxes for "Select Locked Cells" and "Select Unlocked Cells" be checked. This will reset the protection for the Worksheet.

5.0 Adding and Deleting Rows

5.1 A limited number of blank rows are provided in the Lump Sum, Unit Price, and Stored Material worksheets. Additional rows may be added to these worksheets by the User. The first step in this process is to unprotect the worksheet as previously discussed. After the sheet is unprotected, move with caution to prevent inadvertently deleting any cells that contain equations. To insert a row, right click in the row heading at the left of the spreadsheet and select "Insert." A new row will be inserted at the location where the cursor was placed in the row heading. If more than one new row is desired, left click and drag the cursor to include the desired number of rows, right click in the selected row headings and then select "Insert." It is important that the line immediately above the "Totals" row not be included in the rows selected. Doing so will require that equations in the "Totals" row be adjusted. When rows are inserted, Excel automatically adjusts the equations to include the new rows, unless the row directly above the "Totals" row is also selected.

5.2 After new rows are inserted, it is important to copy a line from one of the original rows so correct formatting and equations are copied into each new row. To do this, select the row to be copied by clicking the cell in Column A and dragging the cursor to the last column in the table. Then select "Copy" from the menu or type CTRL+C to copy the cells. Excel will show that this row has been copied by showing a moving dashed line around the cells that are to be copied. Then select the new rows into which the information is to be copied as before and select Paste from the menu or type CTRL+V.

5.3 To delete an unused row, right click in the row heading on the left of the spreadsheet for the row to be deleted and select "Delete." The selected row will be deleted. If more than one row is to be deleted, left click and drag the cursor to the desired number of rows to be deleted and then right click to open the menu and select "Delete." Unlike the admonition on adding new rows, it is okay to delete the row just above the "Totals" row.

5.4 After rows have been added or deleted, it is important reset the worksheet protection.

6.0 Saving Files

This file is provided as a Microsoft ® Excel Open XML workbook template (.xltx) to prevent this file from being inadvertently changed. When an application for payment is created for a specific project, it should be saved as an Excel workbook (.xlxs) file. To do this, select Save As (F12), type in a new file name and select Excel Workbook (.xlxs) from the drop down Save As Type menu.

7.0 License Agreement

This document is subject to the terms and conditions of the License Agreement, 2018 EJCDC® Construction Series Documents. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at www.ejcdc.org and the websites of EJCDC's sponsoring organizations.

Contractor's Application for Payment

Owner:	Waste Commission of Scott County	**Owner's Project No.:**	
Engineer:	Foth Infrastructure & Environment, LLC	**Engineer's Project No.:**	25S040
Contractor:		**Contractor's Project No.:**	
Project:	Cell 10 Construction		
Contract:	Cell 10 Construction		
Application No.:		**Application Date:**	
Application Period:	**From**	**to**	

1. Original Contract Price		$ -
2. Net change by Change Orders		$ -
3. Current Contract Price (Line 1 + Line 2)		$ -
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)		$ -
5. Retainage		
a. _____ X	$ - Work Completed	$ -
b. _____ X	$ - Stored Materials	$ -
c. Total Retainage (Line 5.a + Line 5.b)		$ -
6. Amount eligible to date (Line 4 - Line 5.c)		$ -
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application		$ -
9. Balance to finish, including retainage (Line 3 - Line 4)		$ -

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;
(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and
(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor: _____

Signature: _____ **Date:** _____

Recommended by Engineer	**Approved by Owner**
By:	**By:**
Title:	**Title:**
Date:	**Date:**
Approved by Funding Agency	
By:	**By:**
Title:	**Title:**
Date:	**Date:**

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Progress Estimate - Lump Sum Work

Contractor's Application for Payment

Owner:	Waste Commission of Scott County	**Owner's Project No.:**	
Engineer:	Foth Infrastructure & Environment, LLC	**Engineer's Project No.:**	25S040
Contractor:		**Contractor's Project No.:**	
Project:	Cell 10 Construction		
Contract:	Cell 10 Construction		

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I
			Work Completed					
Item No.	Description	Scheduled Value ($)	(D + E) From Previous Application ($)	This Period ($)	Materials Currently Stored (not in D or E) ($)	Work Completed and Materials Stored to Date (D + E + F) ($)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) ($)
			Original Contract					
			-			-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
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						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
	Original Contract Totals	$ -	$ -	$ -	$ -	$ -		$ -

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Progress Estimate - Lump Sum Work

Contractor's Application for Payment

Owner:	Waste Commission of Scott County	**Owner's Project No.:**	
Engineer:	Foth Infrastructure & Environment, LLC	**Engineer's Project No.:**	25S040
Contractor:		**Contractor's Project No.:**	
Project:	Cell 10 Construction		
Contract:	Cell 10 Construction		

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I
			Work Completed					
Item No.	Description	Scheduled Value ($)	(D + E) From Previous Application ($)	This Period ($)	Materials Currently Stored (not in D or E) ($)	Work Completed and Materials Stored to Date (D + E + F) ($)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) ($)
Change Orders								
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
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						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
	Change Order Totals	$ -	$ -	$ -	$ -	$ -		$ -
Original Contract and Change Orders								
	Project Totals	$ -	$ -	$ -	$ -	$ -		$ -

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Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner: Waste Commission of Scott County
Engineer: Foth Infrastructure & Environment, LLC
Contractor:
Project: Cell 10 Construction
Contract: Cell 10 Construction

Owner's Project No.:
Engineer's Project No.: 25S040
Contractor's Project No.:

Application No.: **Application Period:** From to **Application Date:**

A	B	C	D	E	F	G	H	I	J	K	L
		Contract Information				Work Completed					
Bid Item No.	Description	Item Quantity	Units	Unit Price ($)	Value of Bid Item (C X E) ($)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) ($)	Materials Currently Stored (not in G) ($)	Work Completed and Materials Stored to Date (H + I) ($)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) ($)
Original Contract											
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
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					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
				Original Contract Totals	$ -		$ -	$ -	$ -		$ -

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Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner:	Waste Commission of Scott County	**Owner's Project No.:**	
Engineer:	Foth Infrastructure & Environment, LLC	**Engineer's Project No.:**	25S040
Contractor:		**Contractor's Project No.:**	
Project:	Cell 10 Construction		
Contract:	Cell 10 Construction		

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L
		Contract Information				Work Completed					
Bid Item No.	Description	Item Quantity	Units	Unit Price ($)	Value of Bid Item (C X E) ($)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) ($)	Materials Currently Stored (not in G) ($)	Work Completed and Materials Stored to Date (H + I) ($)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) ($)
Change Orders											
					-		-		-		-
					-		-		-		-
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					-		-		-		-
				Change Order Totals	$ -		$ -	$ -	$ -		$ -
Original Contract and Change Orders											
				Project Totals	$ -		$ -	$ -	$ -		$ -

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Stored Materials Summary

Contractor's Application for Payment

Owner:	Waste Commission of Scott County	**Owner's Project No.:**	
Engineer:	Foth Infrastructure & Environment, LLC	**Engineer's Project No.:**	25S040
Contractor:		**Contractor's Project No.:**	
Project:	Cell 10 Construction		
Contract:	Cell 10 Construction		

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L	M
						Materials Stored			Incorporated in Work			
Item No. (Lump Sum Tab) or Bid Item No. (Unit Price Tab)	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Description of Materials or Equipment Stored	Storage Location	Application No. When Materials Placed in Storage	Previous Amount Stored ($)	Amount Stored this Period ($)	Amount Stored to Date (G+H) ($)	Amount Previously Incorporated in the Work ($)	Amount Incorporated in the Work this Period ($)	Total Amount Incorporated in the Work (J+K) ($)	Materials Remaining in Storage (I-L) ($)
								-			-	-
								-			-	-
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								-			-	-
					Totals	$ -	$ -	$ -	$ -	$ -	$ -	$ -

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SECTION 00 63 36

FIELD ORDER

FIELD ORDER NO.: [Number of Field Order]

Owner:	Waste Commission of Scott County	Owner's Project No.:	
Engineer:	Foth Infrastructure & Environment, LLC	Engineer's Project No.:	25S040
Contractor:		Contractor's Project No.:	
Project:	Cell 10 Construction		
Contract Name:			
Date Issued:		Effective Date of Field Order:	

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work. No work shall be compensated prior to approval by the Owner if a Contract Price or Contract Time change is required.

Reference:

Specification Section(s):

Drawing(s) / Details (s):

Description:

Attachments:

Issued by Engineer

By: _____

Title: _____

Date: _____

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SECTION 00 63 49

WORK CHANGE DIRECTIVE

NO.: _____

Owner:	Waste Commission of Scott County	Owner's Project No.:	
Engineer:	Foth Infrastructure & Environment, LLC	Engineer's Project No.:	25S040
Contractor:		Contractor's Project No.:	
Project:	Cell 10 Construction		
Contract Name:	Cell 10 Construction		
Date Issued:		Effective Date of Work Change Directive:	

Contractor is directed to proceed promptly with the following change(s):

Description:

Attachments:

Purpose for the Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

☐ Non-agreement on pricing of proposed change. ☐ Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: $ _____ **[increase] [decrease] [not yet estimated]**.

Contract Time: _____ days **[increase] [decrease] [not yet estimated]**.

Basis of estimated change in Contract Price:

☐ Lump Sum ☐ Unit Price ☐ Cost of the Work ☐ Other

	Recommended by Engineer	**Authorized by Owner**
By:	_____	_____
Title:	_____	_____
Date:	_____	_____

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SECTION 00 63 62

CHANGE ORDER

NO.:_____

Owner:	Waste Commission of Scott County	Owner's Project No.:	
Engineer:	Foth Infrastructure & Environment, LLC	Engineer's Project No.:	25S040
Contractor:		Contractor's Project No.:	
Project:	Cell 10 Construction		
Contract Name:	Cell 10 Construction		
Date Issued:		Effective Date of Change Order:	

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments:

Change in Contract Price	**Change in Contract Times [State Contract Times as either a specific date or a number of days]**
Original Contract Price: $	Original Contract Times: **Substantial Completion:** Ready for final payment:
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. ___: $	**[Increase] [Decrease]** from previously approved Change Orders No.1 to No. ___: Substantial Completion: Ready for final payment:
Contract Price prior to this Change Order: $	Contract Times prior to this Change Order: Substantial Completion: Ready for final payment:
[Increase] [Decrease] this Change Order: $	**[Increase] [Decrease]** this Change Order: Substantial Completion: Ready for final payment:
Contract Price incorporating this Change Order: $	Contract Times with all approved Change Orders: Substantial Completion: Ready for final payment:

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	Recommended by Engineer (if required)	Accepted by Contractor
By:		
Title:		
Date:		
	Authorized by Owner	**Approved by Funding Agency (if applicable)**
By:		
Title:		
Date:		

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SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Waste Commission of Scott County	Owner's Project No.:	
Engineer:	Foth Infrastructure & Environment, LLC	Engineer's Project No.:	25S040
Contractor:		Contractor's Project No.:	
Project:	Cell 10 Construction		
Contract Name:	Cell 10 Construction		

This ☐ Preliminary ☐ Final Certificate of Substantial Completion applies to:

☐ All Work ☒ The following specified portions of the Work: All paperwork and construction data shall be submitted to the Engineer for the QA/QC Report. All work shall be completed inside the waste boundary for Cell 10 to accept waste.

Date of Substantial Completion:

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: ☐ None ☐ As follows:

Amendments to Contractor's Responsibilities: ☐ None ☐ As follows:

The following documents are attached to and made a part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

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SECTION 00 70 00

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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SECTION 00 70 00

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*

a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change

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Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern* – Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract* – The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents* – Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price* – The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times* – The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor* – The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work* – See Paragraph 13.01 for definition.

18. *Drawings* – The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract* – The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document* – Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means* – Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

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22. *Engineer* – The individual or entity named as such in the Agreement.
23. *Field Order* – A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition* – The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens* – Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone* – A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award* – The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed* – A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner* – The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule* – A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project* – The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
33. *Resident Project Representative* – The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

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35. *Schedule of Submittals* – A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values* – A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site* – Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications* – The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor* – An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal* – A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder* – The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions* – The part of the Contract that amends or supplements these General Conditions.

45. *Supplier* – A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

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46. *Technical Data*

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities* – All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work* – Work to be paid for on the basis of unit prices.

49. *Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive* – A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract

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Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the Performance Bond and Payment Bond (if the Contract requires Contractor to furnish such bonds).

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B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

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2.05 *Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment, a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

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F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

A. *Standards Specifications, Codes, Laws and Regulations*

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error,

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ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation – RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

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2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

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B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. Abnormal weather conditions;
3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
4. Acts of war or terrorism.

D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;
2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

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Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute

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resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their

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officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2. is of such a nature as to require a change in the Drawings or Specifications;
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

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D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

    b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

    c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

    a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

    b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

    c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

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5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
2. complying with applicable state and local utility damage prevention Laws and Regulations;
3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's

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issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

   a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

   b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

   c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or

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Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

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H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

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Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and

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(2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its

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interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

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6.04 *Builder's Risk and Other Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as

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builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.

2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may

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reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for

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the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that the proposed item:

1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be

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evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

a. will certify that the proposed substitute item will:

1) perform adequately the functions and achieve the results called for by the general design;

2) be similar in substance to the item specified; and

3) be suited to the same use as the item specified.

b. will state:

1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

c. will identify:

1) all variations of the proposed substitute item from the item specified; and

2) available engineering, sales, maintenance, repair, and replacement services.

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d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

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E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or

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relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or

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extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with

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them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

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3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. *Samples*

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

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3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

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c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

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8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design

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professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;
2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and

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proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or

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utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

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9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On

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the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in

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contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or

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Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly

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proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;

b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;

c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no

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greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

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The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

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3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a

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Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

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4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

        1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

    c. *Construction Equipment Rental*

        1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

        2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

        3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

    e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

    f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible

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amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

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2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary

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determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

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D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

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14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

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14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

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3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
    a. the Work has progressed to the point indicated;
    b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
    c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
    a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
    b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
    a. to supervise, direct, or control the Work;
    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;

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d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

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h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of

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Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

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15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

   d. a list of all duly pending Change Proposals and Claims; and

   e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to

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Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an

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emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

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B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

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3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

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ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party

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without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SECTION 00 73 00

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SECTION 00 73 00

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® Section 00 70 00, Standard General Conditions of the Construction Contract. The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

SC-1.01.A.18 Add the following language at the end of paragraph 1.01.A.18:

The word Plans used in the Contract Documents shall have the same meaning as Drawings.

ARTICLE 2—PRELIMINARY MATTERS

2.02 *Copies of Documents*

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor one (1) printed copy of the fully signed counterpart of the Agreement, and one (1) copy of the Contract Documents in electronic portable document format (PDF).

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

No Supplementary Conditions.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.05 *Delays in Contractor’s Progress*

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

a. If “abnormal weather conditions” as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.

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b. Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by National Weather Service weather monitoring station at Quad Cities IA/IL (Davenport: Clihttps://www.weather.gov/wrh/climate?wfo=dvnmate; Davenport Mun AP/ Monthly summarized data/Precipitation Sum 2000-2024).

c. Contractor's request for an equitable adjustment in Contract Times may be allowed in the event that precipitation exceeds 300% of the mean monthly precipitation from 2000-2024 (see above NOAA website in SC-4.05C(5)b).

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 *Subsurface and Physical Conditions*

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
none		

F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
none		

5.06 *Hazardous Environmental Conditions*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
none		**[Identify Technical Data]**

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5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
none		

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The Performance Bond that Contractor furnishes will be in the form of EJCDC® Section 00 61 13, Performance Bond (2010, 2013, or 2018 edition).
2. *Required Payment Bond Form:* The Payment Bond that Contractor furnishes will be in the form of EJCDC® Section 00 61 14, Payment Bond (2010, 2013, or 2018 edition).

6.03 *Contractor's Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

D. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	Policy Limits of Not Less Than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	$1,000,000
Bodily injury by disease—aggregate	$1,000,000
Employer's Liability	
Each accident	$1,000,000
Each employee	$1,000,000
Policy limit	$1,000,000
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	$

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F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
2. damages insured by reasonably available personal injury liability coverage, and
3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
    a. Such insurance must be maintained for three years after final payment.
    b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
4. Underground, explosion, and collapse coverage.
5. Personal injury coverage.
6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.

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5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
6. Any limitation or exclusion based on the nature of Contractor's work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy Limits of Not Less Than:
General Aggregate	$2,000,000
Products – Completed Operations Aggregate	$1,000,000
Personal and Advertising Injury	$1,000,000
Bodily Injury and Property Damage – Each Occurrence	$1,000,000

J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	Policy Limits of Not Less Than:
Bodily Injury	
Each Person	$1,000,000
Each Accident	$1,000,000
Property Damage	
Each Accident	$1,000,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	$1,000,000

K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy Limits of Not Less Than:
Each Occurrence	$4,000,000
General Aggregate	$4,000,000

L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such

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umbrella or excess policy must retain a minimum limit of $4,000,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.

M. *Contractor's Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor's Pollution Liability	Policy Limits of Not Less Than:
Each Occurrence/Claim	$1,000,000
General Aggregate	$1,000,000

N. *Contractor's Professional Liability Insurance:* If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

Contractor's Professional Liability	Policy Limits of Not Less Than:
Each Claim	$1,000,000
Annual Aggregate	$1,000,000

P. *Unmanned Aerial Vehicle Liability Insurance:* If Contractor uses unmanned aerial vehicles (UAV—commonly *referred* to as drones) at the Site or in support of any aspect of the Work, Contractor shall obtain UAV liability insurance in the amounts stated; name Owner, Engineer, and all individuals and entities identified in the Supplementary Conditions as additional insureds; and provide a certificate to Owner confirming Contractor's compliance with this requirement. Such insurance will provide coverage for property damage, bodily injury or death, and invasion of privacy.

Unmanned Aerial Vehicle Liability Insurance	Policy Limits of Not Less Than:
Each Claim	$
General Aggregate	$

6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler

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explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.

b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).

4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier). If this coverage is subject to a sublimit, such sublimit will be a minimum of $250,000.

5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of $250,000.

6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.

7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.

8. include performance/hot testing and start-up, if applicable.

9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.

10 include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds."

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ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

D. Contractor shall be responsible for the cost of any overtime pay for work conducted on weekends and/or holidays. Owner shall be responsible for Engineer's services for weekend and/or holiday work.

ARTICLE 8—OTHER WORK AT THE SITE

Not modified.

ARTICLE 9—OWNER'S RESPONSIBILITIES

Not modified.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
3. *Liaison*
    a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
4. *Review of Work; Defective Work*
    a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
    b. Observe whether any Work in place appears to be defective.

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c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.

5. *Inspections and Tests*

a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.

b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.

6. *Payment Requests:* Review Applications for Payment with Contractor.

7. *Completion*

a. Participate in Engineer's visits regarding Substantial Completion.

b. Assist in the preparation of a punch list of items to be completed or corrected.

c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.

d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.

5 Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

No suggested Supplementary Conditions in this Article.

ARTICLE 12—CLAIMS

No suggested Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.03 *Unit Price Work*

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SC-13.03 Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

   a. the extended price of a particular item of Unit Price Work amounts to 20% percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 40% percent from the estimated quantity of such item indicated in the Agreement; and

   b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCCEPTANCE OF DEFECTIVE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

17.02 *Arbitration*

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

17.02 *Arbitration*

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A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of $100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and

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4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

ARTICLE 18—MISCELLANEOUS

Not modified.

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SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. References.
2. Specification Formats and Conventions.
3. Work Covered by the Contract Documents.
4. Work Sequence.
5. Use of Premises.
6. Work by Others.
7. Owner-Furnished Products.
8. Partial Owner Occupancy.

1.2 REFERENCES

A. Definitions
1. Basic Contract definitions and terminology are included in the General Conditions of the Contract.
2. The term "approved," when used to convey Engineer’s action on Contractor's submittals, applications, and requests, is limited to Engineer’s duties and responsibilities as stated in the General Conditions of the Contract.
3. The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

B. Industry Standards
1. Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
2. Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
3. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
4. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.

5. Each section of the specifications generally includes a list of reference standards normally referred to in that respective section. The purpose of this list is to furnish the Contractor with a list of standards normally used for outlining the quality control desired on the project. The lists are not intended to be complete or all inclusive, but only a general reference of standards that are regularly referred to.
6. Each entity engaged in construction on the Project shall be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

1.3 SPECIFICATION FORMATS AND CONVENTIONS

A. The Specifications are organized into Divisions and Sections using the 50-division format and the Construction Specifications Institute's (CSI's) "MasterFormat" numbering system.

B. The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

1.4 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Project Identification
1. Project Location: Waste Commission of Scott County – Scott Area Landfill, 11555 110th Avenue, Davenport, IA 52804
2. Owner: Waste Commission of Scott County
3. Work will be performed under the following prime contracts:
   a. Contract: Cell 10 Construction

B. The Work includes, but is not limited to:
1. Contract: Cell 10 Construction.
   a. Mobilization/Demobilization.
   b. Erosion control installation.
   c. Dewatering.
   d. Stripping and stockpiling topsoil.
   e. Excavation and filling to design grades.
   f. Underdrain system installation.
   g. Composite liner system installation including 2-foot clay liner and 60 mil HDPE smooth and textured liner.
   h. Leachate collection system installation including geocomposite drain net, trench, geotextiles, drainage material, piping, and cleanout.
   i. Protective layer installation (auto shredder residue).

j. Quality assurance/quality control (QA/QC) survey, testing and documentation.
k. Perimeter road and culvert installation.
l. Gas header piping connection and installation.
m. Stormwater basins and structures.
n. Restoration including seeding, fertilization, and mulch.

Note: All work must be coordinated with the operations of the landfill and scheduled to prevent any disruption to daily operations.

1.5 USE OF PREMISES

A. Contractor shall have full use of the premises for construction operations, including use of the Project Site, as allowed by law, ordinances, permits, easement agreements and the Contract Documents.

B. Assume full responsibility for protection and safekeeping of material and products stored on or off premises.

C. Move any stored material or products that interfere with operations of Owner or other Contractors.

D. Obtain and pay for use of additional storage or work areas needed for operation.

E. Use of Site
1. Owner is responsible for providing access for vehicles hauling refuse to existing landfill. Contractor will have to share access road during fill material, solid waste, clay, and topsoil transport activities. Contractor shall not block or disrupt hauling activities. Refuse hauling vehicles shall have right-of-way. Contractor shall maintain haul road in good condition during construction period and repair disturbed areas to Owner's satisfaction upon completion.
2. On-site work shall be limited to between the hours of sunrise to sunset Monday through Saturday. Work on Sundays shall not be allowed unless approved in writing by Owner.
3. Owner to provide access instructions prior to the start of work.

1.6 WORK BY OTHERS

A. Owner will provide quality assurance testing as defined in the specifications.

1.7 OWNER-FURNISHED PRODUCTS

A. Products furnished by Owner and installed by Contractor.
1. Structural fill.
2. Clay materials.
3. Underdrain drainage and leachate collection drainage material.
4. Protective layer (auto shredder residue).

5. Topsoil.
6. Underdrain Pump and electrical.

1.8 PARTIAL OWNER OCCUPANCY

A. Contractor provide:
   1. Access for Owner's personnel.
   2. Prior to occupancy, execute Certificate of Substantial Completion for designated areas.
   3. Access for Engineer to perform all necessary inspections.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 22 01

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Measurement and payment for project items on Unit Price Bid Schedule (Section 00 41 43).

B. Unit Prices include:
   1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all Unit Price Items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but are required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
   2. The method of measurement for payment.
   3. The price per unit for payment.

C. Lump Sum Prices include:
   1. All work items which will result in a functionally complete project in accordance with the specifications and drawings.

D. Earth Work Quantities
   1. Bid quantities based on volume with no shrinkage factor applied.

E. Geosynthetics Quantities
   1. The HDPE liner, geocomposite, and leachate collection trench geotextiles shall be measured inside the waste boundary. All material placed outside the waste boundary (within anchor trench and beyond) is incidental to the bid price.

1.2 GENERAL WORK ITEMS

A. Include with the appropriate Bid Item the following work items which are common to the Bid Items for this Section.
   1. Maintenance, protection, replacement and/or repair of damaged facilities outside the area identified for payment in a separate Unit Price Item.
   2. Site access requirements including temporary soil material as required for access.
   3. Dust control including watering of grades.
   4. Traffic control.
   5. Right-of-way requirements.
   6. Regulatory requirements.
   7. Construction staking and other survey work not provided by Owner's representative.
   8. Location of existing anchor trench, utilities and piping.

9. Protection of existing underground piping and utilities.
10. Quality assurance and quality control (QA/QC) testing and inspections not provided by the Owner's representative.
11. All safety-related costs.
12. Attendance at weekly progress meeting.
13. Shop drawings and other submittals.
14. Removal of litter from construction area.

1.3 BID ITEMS:

A. Mobilization/Demobilization (Bid Item 1)
1. This item includes mobilization and demobilization of equipment, materials, personnel, field office, temporary facilities, and any Contractor provided temporary utilities.
2. Measurement for payment will not be made. The Contractor may apply for this bid item as follows:
   a. When 5% of the original contract amount has been completed, 25% of the contract price for mobilization.
   b. When 10% of the original contract amount has been completed, 50% of the contract price for mobilization.
   c. When 50% of the original contract amount has been completed, 100% of the contract price for mobilization.
3. The unit of measurement for payment is lump sum.

B. Erosion Control (Bid Item 2)
1. The unit price for Erosion Control includes:
   a. Furnish and install erosion bales and silt fences as necessary to prevent siltation of existing ditches, culverts and surrounding water features.
   b. All necessary erosion controls to prevent siltation into the liner construction area.
   c. Construct diversion berms as shown on Drawings.
   d. Removal of any silt that accumulates onto the construction areas.
   e. Maintenance of existing erosion control features until vegetation is established.
   f. Follow the requirements of the landfill stormwater permit (NPDES General Permit #1).
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

C. Clearing and Grubbing (Bid Item 3)
1. The unit price for this bid item includes clearing and grubbing vegetation from the Project Area in accordance with the Specifications.
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

D. Common Excavation – Cell 10 (Bid Item 4) SUDAS CLASS 10
   1. The unit price for this bid item includes excavation of Cell 10 in accordance with Drawings.
   2. Measurement for payment will be based on field survey of the Cell 10 project area, as surveyed by the pre-construction topographic survey by Owner and the Contractor's licensed surveyor.
   3. The unit of measurement for payment is cubic yards.

E. Structural Fill – Cell 10/Perimeter Road (Bid Item 5)
   1. The unit price for this bid item includes hauling and placement of structural fill to meet subbase grades of Cell 10 and the Perimeter Road in accordance with Drawings.
      a. Structural fill over the Bid Item No. 12 Underdrain Trenches is separate.
      b. Structural fill for the Bid Item No. 30 Stormwater Basins is separate.
   2. Measurement for payment will be based on field survey of the Cell 10 project area, as surveyed by the pre-construction topographic survey by Owner and the Contractor's licensed surveyor.
   3. The unit of measurement for payment is cubic yards.

F. Placement of Soil in Stockpile – Cell 10 (Bid Item 6)
   1. The unit price for this bid item includes hauling of excess material from Cell 10 and placement onto Stockpile 2 in accordance with Drawings.
   2. Measurement for payment will be based on field survey of the Cell 10 project area, as surveyed by the pre-construction topographic survey by Owner and the Contractor's licensed surveyor.
   3. The unit of measurement for payment is cubic yards.

G. Underdrain Trenches Without Pipe (Bid Item 7)
   1. The unit price for Underdrain Trenches Without Pipe includes:
      a. Excavation of trenches in accordance with the Drawings.
      b. Furnish and install geotextile for trench.
   2. Measurement for payment will be based on bid quantity.
   3. The unit of measurement for payment is lineal feet.

H. Underdrain Trench With Lateral Pipe and Cleanout (Bid Item 8)
   1. The unit price for Underdrain Trenches With Lateral Pipe and Cleanout includes:
      a. Excavation of trenches in accordance with the Drawings
      b. Furnish and install geotextile for trench, piping, geotextile around piping, and cleanout.
   2. Measurement for payment will be based on bid quantity.
   3. The unit of measurement for payment is lineal feet.

I. Underdrain Trench With Header Pipe (Bid Item 9)
   1. The unit price for Underdrain Trenches With Header Pipe includes:
      a. Excavation of trenches in accordance with the Drawings
      b. Furnish and install geotextile for trench, piping, and geotextile around piping.

2. Measurement for payment will be based on bid quantity.
3. The unit of measurement for payment is lineal feet.

J. Underdrain Sump and Riser (Bid Item 10)
1. The unit price for Underdrain Sump and Riser includes:
   a. Excavation of trench and sump in accordance with the Drawings
   b. Furnish and install geotextiles, piping, sump riser
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

K. Load, Haul, and Place Underdrain Drainage Material (Bid Item 11)
1. The unit price for this bid item includes loading, hauling and placement of underdrain drainage material within the underdrain trenches.
2. Measurement for payment will be based on the bid quantity. Bid quantity is estimated based on the in-place material within the trenches and underdrain sump.
3. The unit of measurement for payment is cubic yards.

L. Structural Fill for Underdrain Trench (Bid Item 12)
1. The unit price for this bid item includes hauling and placement of Structural Fill above the Underdrain Trenches to meet subbase grades of Cell 10 in accordance with construction drawings.
2. Measurement for payment will be based on field survey of structural fill, as surveyed by the Contractor's licensed surveyor.
3. The unit of measurement for payment is cubic yards.

M. Compacted Clay Liner (Bid Item 13)
1. The unit price for Compacted Clay Liner includes:
   a. Hauling, placement, farming, watering, and compaction of 2 feet of compacted clay in accordance with the Specifications and Drawings.
   b. Complete tie-ins to existing compacted clay liner, anchor trenches, and intermediate berms in accordance with the Drawings.
   c. Provide equipment and labor to assist Engineer with quality testing.
2. Measurement for payment will be based on bid quantity, which is determined by the Cell 10 waste limits area multiplied by two-foot thickness.
   a. No payment will be made for clay liner above the specified tolerance.
   b. No payment will be made for compacted clay liner not meeting specifications.
   c. No payment shall be made for compacted clay liner placed outside the Cell 10 limits as shown on the Drawings.
3. The unit of measurement for payment is in-place cubic yards.

N. Smooth and Textured HDPE Liner (Bid Item 14 And Bid Item 15)
1. The unit price for Smooth and Textured HDPE Liner shall include:
   a. Furnish and install HDPE liner meeting the required specifications.
   b. Conduct required quality control/quality assurance testing.
   c. Complete tie-ins to existing HDPE liner.
   d. Make repairs to the existing HDPE liner at the tie-ins to Cell 2 and Cell 9.

2. Measurement for payment will be based on bid quantity, which is determined by the Cell 10 waste limits.
    a. No payment will be made for material placed beyond these limits.
3. The unit of measurement for payment is square feet.

O. Geocomposite Drain Net (Bid Item 16)
1. The unit price for Geocomposite Drainage Net shall include furnish and install Geocomposite Drainage Net meeting the required specifications.
2. Measurement for payment will be based on bid quantity, which is determined by the Cell 10 waste limits.
3. The unit of measurement for payment is square feet.

P. Leachate Collection Perforated Piping and Geotextiles (Bid Item 17)
1. The unit price for Leachate Collection Perforated Piping and Geotextiles includes:
    a. Furnish and install geotextiles, valve, perforated piping, geotextiles for wrapping perforated piping, appurtenances, in accordance with the Drawings and Specifications.
    b. Complete the tie-in to Cell 9.
2. Measurement for payment will be based on the bid quantity which is determined from the Cell 9/10 tie in to the perforated/solid transition at the toe of the Cell 10 slope.
3. The unit of measurement for payment is lineal feet.

Q. Leachate Collection Solid Piping (Bid Item 18)
1. The unit price for Leachate Collection Solid Piping includes:
    a. Furnish and install solid piping and appurtenances including cleanout and solid pipe extending to the north Cell 10 limits, in accordance with the Drawings and Specifications.
2. Measurement for payment will be based on the bid quantity.
3. The unit of measurement for payment is lineal feet.

R. Load, Haul, and Place Leachate Collection Trench Drainage Material (Bid Item 19)
1. The unit price for this bid item includes loading, hauling, and placement of leachate collection drainage material in accordance with construction drawings.
2. Measurement for payment will be based on the bid quantity which is determined within the Cell 10 limits.
3. The unit of measurement for payment is cubic yards.

S. Protective Layer (Bid Item 20)
1. The unit price for Protective Layer shall include:
    a. Load, haul and place Owner-provided protective layer (auto shredder residue).
    b. Thickness as placed shall be 1.0 feet minimum.
2. Measurement for payment will be based on the bid quantity which is determined within the Cell 10 limits.
3. The unit of measurement for payment is cubic yards.

I. Gas Header Piping (Bid Item 21)
   1. The unit price for Gas Header Piping includes furnish and install the 14" gas header as shown on the Drawings.
   2. Measurement for payment will be based on the bid quantity as determined from the connection to existing to the cap.
   3. The unit of measurement for payment is lineal feet.

J. Gas Header Stubouts (Bid Item 22)
   1. The unit price for Gas Header Stubouts includes furnish and install the stubouts (valve, lateral stubout. appurtenances) as shown on the Drawings.
   2. Measurement for payment will be based on the bid quantity.
   3. The unit of measurement for payment is each.

K. Gas Header Connection, Valve (Bid Item 23)
   1. The unit price for Gas Header Piping includes:
      a. Connect to the existing gas header; furnish and install the 14" valve as shown on the Drawings.
   2. Measurement for payment will not be made.
   3. The unit of measurement for payment is lump sum.

L. Perimeter Road with Owner-Provided Shingles (Bid Item 24)
   1. The unit price for Perimeter Road with Owner-Provided Shingles includes:
      a. Subgrade preparation
      b. Furnish and install geotextile per Drawings.
      c. Install Owner-provided recycled shingles.
      d. Furnish and install surface aggregate per the Drawings.
   2. Measurement for payment will be based on field survey of actual shingle-based road.
      a. Estimated bid quantities are half of the road limits.
   3. The unit of measurement for payment is square yards.

M. Perimeter Road with Macadam Stone (Bid Item 25)
   1. The unit price for Perimeter Road with Macadam Stone includes:
      a. Subgrade preparation
      b. Furnish and install geotextile per Drawings.
      c. Furnish and install macadam stone per Drawings.
      d. Furnish and install surface aggregate per the Drawings.
   2. Measurement for payment will be based on field survey of actual macadam-based road.
      a. Estimated bid quantities are half of the road limits.
   3. The unit of measurement for payment is square yards.

N. Culvert under Perimeter Road (Bid Item 26)
   1. The unit price for the Culvert Under the Perimeter Road includes furnish and install the culvert, bedding material, end sections, and appurtenances as shown in the Drawings.
   2. Measurement for payment will not be made.

3. The unit of measurement for payment is lump sum.

F. Dewatering (Bid Item 27)
1. The unit price for Dewatering includes all actions undertaken to dewater excavations and work area as required to perform the work.
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

G. Topsoil Stripping - Stormwater Basins (Bid Item 28)
1. The unit price for this bid item includes stripping and stockpiling topsoil from the stormwater basins project area in accordance with construction drawings.
2. Measurement for payment will be based on the actual volume of material placed into the topsoil stockpile as measured by survey of the stockpile. Bid quantity is based on a uniform 1-foot thickness over the project area.
3. The unit of measurement for payment is cubic yards.

H. Excavation - Stormwater Basins (Bid Item 29) SUDAS Class 10
1. The unit price for this bid item includes excavation of the stormwater basins in accordance with construction drawings.
2. Measurement for payment will be based on the actual volume of material measured by field survey of the Stormwater Basins project area.
3. The unit of measurement for payment is cubic yards.

I. Structural Fill - Stormwater Basins (Bid Item 30)
1. The unit price for this bid item includes hauling and placement of Structural Fill to meet grades of the stormwater basins in accordance with construction drawings.
2. Measurement for payment will be based on the actual volume of material measured by field survey of the Stormwater Basins project area.
3. The unit of measurement for payment is cubic yards.

T. Placement of Soil in Stockpile – Stormwater Basins (Bid Item 31)
1. The unit price for this bid item includes hauling of excess material from the Stormwater Basins and placement onto Stockpile 2 in accordance with Drawings.
2. Measurement for payment will be based on the actual volume of material measured by field survey of the Stormwater Basins project area.
3. The unit of measurement for payment is cubic yards.

J. Riprap and Geotextile – Stormwater Basins (Bid Item 32)
1. The unit price for this bid item includes:
   a. Furnish and install geotextile for placement beneath riprap
   b. Furnish and install riprap in the perimeter ditch and on and within the stormwater basins.
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

K. Culvert Between Stormwater Basins (Bid Item 33)

1. The unit price for this bid item includes:
   a. Furnish and install the culverts between the stormwater basins.
   b. Furnish and install any appurtances such as bedding stone, end sections, collars, trash guards indicated on the Drawings.
2. Measurement for payment will not be made.
3. The unit of measurement for payment is each.

L. Stormwater Basin Outlet Structure (Bid Item 34)
1. The unit price for this bid item includes:
   a. Furnish and install the outlet structure in accordance with the Drawings.
   b. Furnish and install any appurtances such as bedding stone, end sections, geotextile, collars, trash guards indicated on the Drawings.
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

M. Site Restoration (Bid Item 35)
1. The unit price for Site Restoration includes:
   a. General site cleanup
   b. Restoration of site haul and maintenance roads to conditions that existed prior to construction (if damaged by Contractor)
   c. Removal of temporary erosion controls following establishment of vegetation
   d. Seeding, fertilizing, and mulching including a one-year maintenance warranty on vegetation. SUDAS 9010
   e. Conduct restoration activities on areas disturbed within the project limits of Cell 10 and the area of the stormwater basins.
2. Measurement for payment will not be made.
3. The unit of measurement for payment is lump sum.

1.4 ALTERNATE BID ITEMS

A. Underdrain Drainage Blanket (Bid Alternate A-6)
1. The unit price for Underdrain Drainage Blanket shall include:
   a. Drainage media; Contractor to propose use of Owner-provided underdrain drainage material at a thickness of 6 inches or to furnish a geocomposite drain net with equivalent permeability.
   b. Install drainage media under the compacted clay liner, sloping west to the Underdrain Header Trench
2. Measurement for payment will be based on field survey of in-place Underdrain Drainage Blanket as determined within Cell 10 limits. The bid quantity extends from the base of the compacted clay liner to an elevation of 680 ft.
3. The unit of measurement for payment is square feet.

B. Smooth and Textured HDPE Liner- White (Bid Alternates A-14 and A-15)
1. The unit price for Smooth and Textured HDPE Liner- White includes the work described in Bid Items 14 and 15 with furnishing white HDPE liner material in lieu of black.

2. Alternate Bid Items A-14 and A-15 will be measured and paid in accordance with Bid Items 14 and 15.
3. The Bid Items 14 and 15 do not exclude the use of white HDPE liner.

1.5 OPTIONAL BID ITEMS

A. Excavation within future Cell 11- Winter (Optional Bid Item A)
1. The unit price for this bid item includes excavation from Cell 11 or otherwise directed by Owner, hauling, and placement of material onto Stockpile 2.
   a. Excavation and hauling to be completed during the winter months at a schedule mutually agreed upon by Contractor and Owner.
2. Measurement for payment will be based on the actual volume of material placed into Stockpile 2 as measured by survey.
   a. The survey of the Stockpile following completion of the Cell 10 project will form the basis of the volume calculation.
   b. Following completion of the Cell 11 winter excavation, the Contractor's licensed surveyor will conduct a field topographic survey of the Stockpile.
   c. Engineer will calculate the volume consumed using CAD software.
3. The unit of measurement for payment is cubic yards.

1.6 ALLOWANCES

A. Underdrain Trenches- Bedrock Removal (Allowance A) SUDAS CLASS 12
1. The unit price for Underdrain Trenches- Bedrock Removal includes:
   a. Excavation of bedrock, should bedrock be encountered, from underdrain trenches
   b. Methods to exclude blasting.
2. Measurement for payment will be based on field survey of in-place bedrock before and after excavation by the Contractor's licensed surveyor.
   a. Engineer shall verify the presence of bedrock.
   b. No payment will be made for bedrock excavation not approved by Engineer.
3. The unit of measurement for payment is cubic yards.

B. Underdrain Trenches – Additional Trenches (Allowance B)
1. The unit price for Underdrain Trenches – Additional Trenches includes:
   a. Excavation of trenches should unexpected areas of groundwater be encountered.
   b. Furnish and install geotextile
   c. Install Owner-Provided drainage material
   d. Backfill in accordance with compaction requirements
   e. Additional Trenches shall be connected to Underdrain Trench as designed.
   f. Locations must be approved by Engineer.
2. Measurement for payment will be based on field survey of installed trenches, as surveyed by the Contractor's licensed surveyor.
   a. Engineer shall verify the locations of Additional Trenches.
   b. No payment will be made for Additional Trenches not approved by Engineer.
3. The unit of measurement for payment is lineal feet.

C. Subgrade – Replacement of Unsuitable Material (Allowance C) SUDAS CLASS 13
   1. The unit price for this Allowance includes:
      a. Excavation of unsuitable material from subgrade and hauling to Stockpile 2.
      b. Replacement and compaction with Structural Fill.
   2. Measurement for payment will be based on field survey of in-place unsuitable material before and after excavation by the Contractor's licensed surveyor.
      a. Engineer shall verify the presence of unsuitable material.
      b. No payment will be made for excavation of unsuitable material not approved by Engineer.
   3. The unit of measurement for payment is cubic yards.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes:
   1. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

A. Unit price work will be the Schedule of Values used as the basis for reviewing Applications for Payment.

B. For lump sum contracts, furnish a statement allocating portions of the Contract Sum to various portions of the work, which will be used as the basis for reviewing Applications for Payment.
   1. Submit preliminary Schedule of Values within 10 days after the effective date of the Agreement and before the Preconstruction Conference.
   2. At the Preconstruction Conference, the preliminary Schedule of Values will be reviewed for acceptability by the Engineer.
   3. Within 10 days after the Preconstruction Conference, and before submittal of progress payments, make corrections and adjustments as necessary to obtain an acceptable Schedule of Values and resubmit to the Engineer.

C. Format and Content:
   1. Use the Bid Form as a guide to establish line items for the Schedule of Values.
   2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.
   3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
   4. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   5. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as recommended by the Engineer and approved by Owner.

B. The date for each progress payment is the tenth day of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends 10 days before the date for each progress payment.

C. Requests for progress payments shall be at least 10 days before the date established for each progress payment, but not more often than once a month.

D. Use forms provided by Engineer for applications for payment. Sample copy of the Application for Payment and Continuation Sheet is included in section "Contractor's Application for Payment."

E. Application Preparation Procedures:
1. Contractor shall prepare a preliminary determination for payment based on the approved Schedule of Values and review with Engineer before completing Application for Payment.
    a. Submit a signed copy of Application for Payment to Engineer with signed certification within time frame agreed to at the Preconstruction Conference.
    b. Engineer will submit the Application for Payment with recommendation to Owner.
2. If payment is requested for materials and equipment not incorporated in the Work, then the following shall be submitted with the Application for Payment:
    a. Evidence that materials and equipment are suitably stored at the site or at another location agreed to in writing.
    b. A bill of sale, invoice, or other documentation warranting that the materials and equipment are free and clear of all liens.
    c. Evidence that the materials and equipment are covered by property insurance.
3. Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of Contractor.

F. With each Application for Payment, submit waivers of liens from subcontractors and suppliers for the construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested before deduction for retainage on each item.
2. When an application shows completion for an item, submit final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work shall submit waivers.
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application.
5. Submit waivers of lien on forms executed in a manner acceptable to Owner.

G. The following administrative actions and submittals shall precede or coincide with submittal of first Application for Payment:
1. List of subcontractors.
2. Schedule of Values.
3. Contractor's construction schedule.

4. Copies of building and other permits.
5. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.

H. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including, but not limited to, the following:
1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations, where required, and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Consent of Surety to Final Payment.
5. Final lien waivers as evidence that claims have been settled.
6. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project meetings including, but not limited to, the following:
   1. Preconstruction conferences.
   2. Progress meetings.
   3. Geomembrane preinstallation conferences.
   4. Closeout meeting.

1.2 PRECONSTRUCTION MEETING

A. Engineer will schedule a preconstruction meeting within 30 calendar days after the Contract Times start to run and before Work at the site is started.

B. Authorized representatives of the Owner, Engineer, Contractor and its superintendent; major subcontractors; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to make binding decisions of matters relating to the Work.

C. The purpose of the Preconstruction Meeting is to establish a working understanding among the parties as to the Work. The following items shall be discussed and serve as the agenda:
   1. Preliminary schedules prepared by the Contractor:
      a. Progress schedule.
      b. Schedule of submittals for shop drawings and samples.
      c. Schedule of values for all of the Work.
   2. Site access, facility coordination, hours of work.
   3. Safety requirements.
   4. Quality assurance and quality control requirements.
   5. Processing Applications for Payment.
   6. Maintaining required records.
   7. Other Project requirements.
   8. Engineer will prepare and distribute minutes.

1.3 PROGRESS MEETINGS

A. Progress meetings will be scheduled by the Engineer at regular intervals.

B. In addition to representatives of the Owner, the Engineer and the Contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these

meetings. All participants at the conference shall be familiar with the Project and authorized to make binding decisions on matters relating to the Work.

C. The purpose of the Progress Meeting is to review items of significance that could affect progress. The following items shall be discussed and serve as the agenda:
   1. Review of schedule:
      a. Status of each activity or product in relation to the construction schedule.
      b. Review items behind schedule and actions to expedite or correct the deficiency.
   2. Coordination, site access.
   3. Submittals, deliveries, off-site supplier issues.
   4. Safety or hazard issues.
   5. Quality assurance and quality control issues.
   6. Payment applications and change orders.
   7. Maintaining required records.
   8. Other Project requirements.
   9. Engineer will prepare and distribute minutes.

D. Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule within 5 days after each meeting.

1.4 GEOMEMBRANE PREINSTALLATION MEETING

A. Contractor shall schedule a geomembrane preinstallation meeting at least five (5) working days prior to the commencement of geomembrane deployment.

B. Representatives of the Owner, the Engineer, the Contractor, and the geomembrane installer shall attend the geomembrane preinstallation meeting. All participants at the conference shall be familiar with the Project and authorized to make binding decisions on matters relating to the Work.

C. The purpose of the Preinstallation Meeting is to coordinate the geomembrane installation. The following items shall be discussed and serve as the agenda:
   1. Field personnel and responsibilities.
   2. Coordination, site access, work hours, and schedule.
   3. Submittals including panel layout diagram and quality control samples.
   4. Certificate of subgrade acceptance.
   5. Weather conditions.
   6. Safety requirements.
   7. Quality assurance and quality control requirements.
   8. Record requirements.
   9. Engineer will prepare and distribute minutes.

1.5 CLOSEOUT MEETING

A. Engineer will schedule a closeout meeting within 10 calendar days following notification of Substantial Completion.

B. Authorized representatives of the Owner, Engineer, Contractor and its superintendent; shall attend. All participants at the conference shall be familiar with the Project and authorized to make binding decisions of matters relating to the Work.

C. The purpose of the Closeout Meeting is to verify that Substantial Completion has been attained and to develop a punch list of items required for Final Completion. The following items shall be discussed and serve as the agenda:
   1. Site Inspection.
      a. Final punch list items to be developed.
   2. Procedures for Final Completion and payment.
   3. Delivery of record measurements and documents.
   4. Engineer will prepare and distribute minutes and the final punch list.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following administrative and procedural requirements for submittals:
   1. Progress Schedule.
   2. Shop Drawings and Product Data.
   3. Quality Assurance and Quality Control (QA/QC) Submittals.
   4. Engineer's Action.

B. Failure to meet Submittal requirements to the satisfaction of the Engineer will constitute unsatisfactory performance of the work in accordance with the Contract Documents; therefore, the Engineer may recommend to the Owner that all or a portion of payments requested during the corresponding pay period be withheld until these requirements are met.

1.2 CONTRACTOR'S PROGRESS SCHEDULE

A. Prepare and submit to the Engineer within 10 days after the Effective Date of the Agreement, a preliminary progress schedule of the work activities from Notice to Proceed until Substantial Completion.
   1. Provide sufficient detail of the work activities comprising the schedule to assure adequate planning and execution of the work, such that in the judgment of the Engineer, it provides an appropriate basis for monitoring and evaluation of the progress of the work.
   2. The schedule shall indicate the sequence of work activities. Identify each activity with a description, start date, completion date and duration. Include, but do not limit to, the following items, as appropriate to this contract:
      a. Shop drawing review by the Engineer.
      b. Material and Equipment:
         1) Order.
         2) Manufacture.
         3) Delivery.
         4) Installation.
      c. Performance tests and supervisory service activities.
      d. Excavation and grading.
      e. Construction of various facilities.
      f. Construction of various segments of utilities.
      g. Subcontractor's items of work.
      h. Allowance for inclement weather.
      i. Date of Substantial Completion.
      j. Interfacing and sequencing with existing facilities and utilities.

k. Sequencing of major construction activities.
l. Milestones and completion dates.

B. Distribution – Following response to the initial submittal, distribute copies of the revised construction schedule to the Engineer, Owner, and other parties required to comply with scheduled dates.

C. Schedule Updating – Revise and issue the schedule after each meeting, event, or activity where revisions have been recognized or made.

D. Punch List – Prepare and submit to the Engineer within 10 days after substantial completion a detailed progress schedule for outstanding work and punch list items.

1.3 SHOP DRAWINGS AND PRODUCT DATA

A. Submittal Schedule

Submit a PDF copy of the preliminary submittal schedule in accordance with the General Conditions of the Contract and as follows:

1. Coordinate submittal schedule with the subcontractors, Schedule of Values, and the list of products as well as the Contractor's Progress Schedule.
2. Prepare the schedule in chronological order. Provide the following information:
   a. Scheduled date for the first submittal.
   b. Related Section number.
   c. Submittal category (Shop Drawings, Product Data, or Samples).
   d. Name of the subcontractor.
   e. Description of the part of the work covered.
   f. Scheduled date for the Engineer's final release or approval.

Revise the schedule as needed and present the schedule at each progress meeting. Distribute a PDF copy to Engineer following the progress meeting for inclusion in the meeting minutes.

B. Submittal Procedures

1. Coordination – Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
   a. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   b. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the work to permit processing.

C. Submittal Preparation

1. Assign a reference number to each submittal and resubmittal.
2. Include a cover sheet identifying the following:
   a. Project name.
   b. Submittal log number and date.
   c. Engineer, Contractor, Subcontractor, Supplier, Manufacturer, as relevant.
   d. Specifications and/or Drawing reference number, as appropriate.

3. Each submittal shall be stamped by the Contractor indicating that submittal was reviewed for conformance with the Contract Documents. The Engineer will not accept unstamped submittals.
4. Contractor shall transmit submittal directly to Engineer electronically as a PDF.

D. Distribution – Furnish copies of reviewed submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
1. Do not proceed with installation until a copy of the Shop Drawing is in the Installer's possession.
2. Do not permit use of unmarked copies of the Shop Drawing in connection with construction.

E. Shop Drawings and Product Data
Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
1. Shop drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:
   a. Dimensions.
   b. Identification of products and materials included by sheet and detail number.
   c. Compliance with specified standards.
   d. Notation of coordination requirements.
   e. Notation of dimensions established by field measurement.
2. Product data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
3. Mark each copy to show actual product to be provided. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
   a. Manufacturer's printed recommendations.
   b. Compliance with trade association standards.
   c. Compliance with recognized testing agency standards.
   d. Application of testing agency labels and seals.
   e. Notation of dimensions verified by field measurement.
   f. Notation of coordination requirements.

1.4 QUALITY ASSURANCE SUBMITTALS

A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other sections of the specifications.

B. Certifications – Where other sections of the specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
   1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

C. Inspection and Test Reports – Submit as required by other sections of the specifications.

1.5 ENGINEER'S ACTION

A. Where action and return is required, the Engineer will review each submittal and return with a Submittal Review Form (attached to this Specification). The Engineer will note the action taken, as follows:
   1. "No Exceptions Taken": The work covered by the submittal may proceed provided it complies with requirements of the Contract Documents.
   2. "Make Corrections Noted": The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
   3. "Amend and Resubmit": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Amend and Resubmit" at the Project Site or elsewhere where work is in progress.
   4. "Rejected - See Remarks": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Rejected and Resubmit" at the Project Site or elsewhere where work is in progress.
   5. Unsolicited Submittals: will be returned without action.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 01

SUBMITTAL REVIEW FORM

Submittal Review Form

Owner: Waste Commission of Scott County

Project: Cell 10 Construction

Engineer's Project #: 25S040

Contractor:

Contractor's Project #:

Submittal No.:

Description:

Specification Section:

Date Received:

Date Returned:

Item	Action*	Comments
Reviewer:		**Date:**

These documents have been reviewed for conformance with the design concept of the work and the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating their work with that of all other trades and performing all work in a safe and satisfactory manner.

* Action Stamped on Submittal(s):

1. *No Exceptions Taken* - The work covered by the submittal may proceed provided it complies with requirements of the Contract Documents.
2. *Make Corrections Noted* - The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
3. *Amend and Resubmit* - Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Amend and Resubmit" at the Project Site or elsewhere where work is in progress.
4. *Rejected* - See Remarks - Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Rejected and Resubmit" at the Project Site or elsewhere where work is in progress.
5. *Unsolicited Submittals* - The Engineer/Architect will return unsolicited submittals to the sender without action.

SECTION 01 35 53.13

SAFETY AND ENVIRONMENTAL PROCEDURES FOR HAZARDOUS MATERIAL SITES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Site safety and health plan.
2. Personal injury and property damage prevention.
3. Personnel organization, qualifications and responsibilities.

1.2 REFERENCES

A. Code of Federal Regulations
1. 29 CFR 1910 – Occupational Safety and Health Standards.
2. 29 CFR 1926 – Safety and Health Regulations for Construction.

1.3 SUBMITTALS

A. Submit Site Safety and Health Plan, not for approval, but as evidence of compliance with State and Federal requirements.

1.4 SITE SAFETY AND HEALTH PLAN

A. Develop and implement a site safety and health plan meeting the requirements of 29 CFR 1910.120, 29 CFR 1926 and other applicable federal, state, and local regulations.

B. Prepare the plan specifically for the site and the anticipated activities based on available information on site conditions and hazards.

C. The plan shall be considered a living document, updated as conditions change during Project execution.

D. On-site work shall not begin until the plan has been prepared and implemented.

E. Include the following in the implementation portion of the plan:
1. Monitoring for flammable atmospheres in the work area, including excavations.
2. Monitoring of atmosphere for toxic vapors.
3. Monitoring for other hazards commonly associated with construction activities.

F. The contractor is to comply with the requirements of the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard. The contractor, subcontractor, and their employees who will be working on or near the waste or are potentially exposed

to landfill gas are required to have the OSHA 40-hour Health and Safety training and required to be submitted to the Owner prior to start of construction. The Contractor must include copies of updated certificates of OSHA training for each employee working at the site required to have such training based on OSHA rules.

1.5 PERSONAL INJURY AND PROPERTY DAMAGE PREVENTION

A. Provide necessary protection to prevent damage, injury, or loss to:
1. Persons on the Site or who may be affected by the Work;
2. Materials and equipment to be incorporated in the Work;
3. Other property at or adjacent to the Site, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement.

B. Comply with all applicable laws, ordinances, rules and regulations affecting the safety of persons or property providing any necessary safeguards for such safety and protection.

C. Notify the owners of any properties or utilities that are affected by the Work.

D. The duties and responsibilities of the Contractor for the safety and environmental protection of the workers and the site shall continue until final payment is made by the Owner to the Contractor.

1.6 PERSONNEL ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

A. Designate the Safety Representative per the General Conditions, a Site Safety and Health Officer, and at least one alternate.

B. The Site Safety and Health Officer shall:
1. Implement and enforce the site health and safety plan.
2. Provide hazard communication information.
3. Be responsible for any safety environmental monitoring.
4. Have the authority to stop work activities if unacceptable health or safety conditions exist.
5. Coordinate and recommend corrective actions for identified health and safety deficiencies and oversee the corrective actions.

C. Training
1. As a minimum, personnel performing duties with potential for exposure to on-site contaminants shall meet the 29 CFR 1910.120 and 29 CFR 1926 training requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Underground Utilities.
2. Dewatering.
3. Property Monuments and Existing Structures.
4. Traffic Control.
5. Facility Permitted by the Iowa Department of Natural Resources (IDNR).
6. Health and Safety.

1.2 UNDERGROUND UTILITIES

A. Under the provisions of Iowa Code, Chapter 480.4, all contractors, subcontractors, and any firm or individual intending to do work on this contract shall contact all utility firms in the affected area of construction a minimum of 48 hours prior to beginning construction so that affected utilities will be located and marked. Contact Iowa One Call at 1-800-292-8989.

1.3 DEWATERING

A. Obtain required permits from all regulatory governmental agencies governing dewatering.

B. Conduct dewatering as necessary to complete construction.

1.4 PROPERTY MONUMENTS AND EXISTING STRUCTURES

A. Protect iron pipe monuments or existing structures (e.g., landfill gas [LFG] wells, underground force mains, groundwater monitoring wells) from movement.

B. The cost of replacement of any monuments or existing structures that are moved or destroyed during construction shall be the Contractor’s responsibility.

C. Perpetuation of destroyed or moved monuments or existing structures shall be performed in accordance with state statutes by a registered land surveyor.

1.5 TRAFFIC CONTROL

A. Provide traffic control facilities as needed using barricades, signs, lights, warning devices, pavement markings, flaggers, etc. to direct landfill customers and employees safely through the project area. If large equipment must pass over a traveled

thoroughfare within the project, the Owner may require additional traffic controls up to and including a flag person.

1.6 FACILITY PERMITTED BY IDNR

A. The Waste Commission of Scott County – Scott Area Landfill is permitted to operate under IDNR permit number 82-SDP-09-92. The Contractor shall not violate any conditions of the permit. A copy of the permit is available by contacting the Engineer.

B. The Waste Commission of Scott County – Scott Area Landfill is required to maintain a National Pollutant Discharge Elimination System (NPDES) General Permit No. 1, "Storm Water Discharge Associated with Industrial Activity." Contractor will take necessary measures to prevent the movement of soils into adjacent waterways.

C. Contractor shall not violate any permit conditions.

1.7 HEALTH AND SAFETY

A. The contractor is to comply with the requirements of the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 43 33.13

CERTIFICATE OF ACCEPTANCE OF SOIL SUBGRADE SURFACE BY INSTALLER

INSTALLER		PROJECT:
Company Name:	_____	Cell 10 Construction of Scott Area Landfill
Authorized Representative:	_____	OWNER:
Address:	_____	Waste Commission of Scott County

Description of Area to be accepted: _____

_____

Estimated Area to be accepted: _____ square feet

Certification Statement:

The undersigned certifies that he/she is an authorized representative of the geomembrane installer named above and is duly authorized to execute this certificate, and that he/she visually inspected the subgrade surface named above and found the surface to be acceptable for installation of the geomembrane.

This document only applies to the acceptability of surface conditions for installation of geosynthetic products. The installer does not accept responsibility for compaction, elevation or moisture content, nor for the surface maintenance during deployment. Structural integrity of the subgrade and maintenance of these conditions are the responsibility of the Contractor.

Date: _____

INSTALLER:

Authorized Representative (print): _____

Authorized Representative (signature): _____

Title: _____

ENGINEER: Foth Infrastructure & Environment, LLC

Authorized Representative (print): _____

Authorized Representative (signature): _____

Title: _____

END OF SECTION

SECTION 01 45 16

QUALITY CONTROL AND ASSURANCE PLAN

DRAFT

Plan

Quality Control and Assurance Plan

Scott Area Sanitary Landfill
Permit No. 82-SDP-09-92

Waste Commission of Scott County
Davenport, Iowa

October 2025

Project ID: 25S047

Solving our clients' toughest science and engineering challenges.

Quality Control and Assurance Plan
Scott Area Landfill

Project ID: 25S047

Prepared for
Waste Commission of Scott County
11555 110th Avenue
Davenport, IA 52804

Prepared by
Foth Infrastructure & Environment, LLC

October 2025

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Quality Control and Assurance Plan
Scott Area Landfill

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Appendix

Appendix A Examples of Forms

List of Abbreviations, Acronyms, and Symbols

ASTM	ASTM International
cm/sec	centimeter per second
CY	cubic yard
FML	flexible membrane liner
Foth	Foth Infrastructure & Environment, LLC
IAC	Iowa Administrative Code
IDNR	Iowa Department of Natural Resources
IDOT	Iowa Department of Transportation
QC&A	Quality Control and Assurance
QC&A Plan	Quality Control and Assurance Plan
TDA	Tire Derived Aggregate

1. Introduction

This Quality Control and Assurance (QC&A) Plan (QC&A Plan) is intended to fulfill the requirements of Iowa Administrative Code (IAC) 567.113.7(6) (Quality Control and Assurance Programs) for the construction of the Scott Area Landfill (SALF) which operates under the Iowa Department of Natural Resources (IDNR) permit number 82-SDP-09-92. This QC&A Plan is submitted as Appendix D of the Permit Renewal and Modification submitted in September 2025. This QC&A Plan will form the basis for project-specific QC&A Plans which will include project-specific components and identify the QC&A Officer. The project-specific QC&A Plans may be issued as an amendment to this QC&A Plan, describing project-specific details such as construction components and QC&A Officer.

1.1 Purpose and Scope

The purpose of this QC&A Plan is to ensure that the SALF is constructed in accordance with the requirements of IAC 567.113.7 and the approved plans and specifications. The aspects of construction to be documented according to the QC&A Plan include the groundwater underdrain system, subgrade of the liner system, the liner system (including compacted clay liner and flexible membrane liner), the leachate collection system, final cover system, and any other aspect of construction as identified in the project-specific QC&A Plans or amendments.

The QC&A Plan describes the methods and procedures to ensure quality, which include but may not be limited to review of product and material submittals, observation and documentation of construction aspects, field and lab testing of construction materials, conducting meetings to facilitate quality assurance and identify issues, and the preparation of an observation report.

Where this QC&A Plan differs from the project-specific plans and specifications, the plans and specifications shall supersede.

2. Responsibility and Authority

This section describes the roles and responsibilities of the project team. Each party is responsible for following this QC&A Plan, the approved plans and specifications, the applicable contract documents, and applicable regulations, as described below, unless otherwise stipulated by the contract documents.

2.1 Permitting Agencies

The IDNR has regulatory authority for approval of the permit required for operations and construction of the SALF.

2.2 Facility Owner/Operator

The Owner is the Waste Commission of Scott County. The Owner has control of the entities charged with design, QC&A, and construction. The Owner may designate an Owner's Representative. All references to Owner in this document shall implicitly include the Owner's Representative.

2.3 Design Engineer

The Design Engineer is responsible for the design of the project. The Design Engineer reports to the Owner. Duties and responsibilities include, but are not limited to, the following:

- Produce the contract documents, including the plans and specifications.
- Review, generate, and approve all design and/or specification modifications and clarifications.
- Assist the QC&A Officer and Owner in determining the validity of change requests and claims.

2.4 Construction Contractor

The Contractor is responsible for completing all work as specified or indicated in the contract documents. The Contractor shall provide labor, equipment, and materials to complete work and shall be responsible for the work of subcontractors, manufacturers, and installers, unless otherwise specified in the contract documents. The Construction Contractor reports to the Owner. Duties and responsibilities include, but are not limited to, the following:

- Submit all required shop drawings, material samples for required laboratory testing in advance of work beginning, and laboratory results with adequate time for approval from the Engineer or QC&A Officer.
- Perform testing and survey as specified in the contract documents.
- Ensure that the construction is in conformance with the contract documents and standard construction practices for the types of work.
- Ensure all constructed and installed materials meet the specifications listed in the contract documents.

- Maintain as-built records to document the work and changes in the contract documents and submit as-built records to QC&A Officer prior to final payment and acceptance of the project.

2.5 Quality Control and Assurance Officer

The QC&A Officer shall meet the requirements of IAC 567.113.7(6)a including being registered as a Professional Engineer in Iowa. The QC&A Officer shall document compliance with the aspects of construction as described in Section 6 and may delegate supervision or implementation of this QC&A Plan to one or more QC&A Monitor(s). Duties and responsibilities include, but are not limited to, the following:

- Observing and documenting construction activities.
- Review of product and material submittals and verify for conformance with the specifications.
- Sampling and testing of construction materials (unless otherwise assigned in the contract documents).
- Verifying plans and specifications.
- Reporting progress directly to the Owner.
- Documenting and informing the Owner and Contractor of nonconforming construction and/or materials.
- Preparing the Construction Observation Report, sealed by a licensed Professional Engineer in Iowa, that documents the construction of the project according to IAC 567.113.7 and the approved plans and specifications.

2.6 Testing Laboratories

Testing labs are responsible for testing soils, and other materials used in construction. Testing labs shall maintain certifications typical for the material to be tested from the appropriate certifying agency. Testing labs may report to the Owner, Contractor, or QC&A Officer, which will be specified in the contract documents.

3. Meetings

The QC&A Plan includes a preconstruction meeting, progress meetings, and dispute resolution meetings if necessary. Documentation of all meetings will be completed by the Design Engineer or QC&A Officer.

3.1 Preconstruction Meeting

Prior to construction, a preconstruction meeting will be held with the Contractor, Design Engineer, Owner, and QC&A Officer. Topics to be discussed during the meeting are outlined in the specifications. The purpose of this meeting includes:

- Familiarize each party with the project-specific QC&A Plan and its role relative to the design criteria, regulations, plans, and specifications.
- Determine if any changes to the QC&A Plan are needed to ensure that the facility will be constructed to meet or exceed the specified design.
- Review the responsibilities and authority of each party, and the lines of communication of the project team.
- Discuss the established procedures or protocol for observations and tests including sampling strategies.
- Discuss the established procedures or protocol for handling construction nonconformance, repairs, and retesting.
- Review methods for documenting and reporting test data.
- Review methods for distributing and storing documents and reports.

3.2 Progress Meetings

Project progress meetings will be held at regularly scheduled intervals during the project. The QC&A Officer is responsible for coordinating, conducting, and documenting these meetings. The meetings will be attended by the construction contractor, the QC&A Officer, and the Owner. The meetings will cover:

- Review of construction progress during the previous week
- Project schedule and upcoming work
- Any construction deficiencies and/or proposed corrective actions
- Anticipated construction problems

3.3 Dispute Resolution Meeting

A special meeting will be held when a construction problem or nonconformance is present and likely to reoccur. The purpose of the meeting is to define and resolve the issue to prevent future deficiencies. At minimum, the Contractor and QC&A Officer will attend and the meeting will be documented by the QC&A Officer.

4. Construction Observation – Recordkeeping

4.1 Daily Construction Observation Report

A daily Construction Observation Report will be prepared by the QC&A Officer for each day of activity, and will contain (as appropriate) the following information:

- Date, work hours, weather.
- Contractors, subcontractors, and other personnel on site, and purpose.
- Summary of locations at the facility where construction was occurring.
- Summary of any meetings held regarding construction and the attendees.
- Summary of equipment, materials, and personnel utilized in construction.
- Summary of construction progress.
- Summary of the sampling and testing including locations, methods, and results.
- Details of any nonconforming component and the proposed or completed remedy.
- Signature of the inspector.

An example Daily Construction Observation Report form that may be used for the daily report is provided in Appendix A.

4.2 Photographs

Photographs shall be taken to show construction methods, assemblies, issues, deficiencies, etc., and will be the responsibility of the QC&A Officer. Enough photographs shall be obtained to document the construction of each item. Photographs will be taken prior to covering or backfilling, if applicable. Each photograph will be labeled with the following information:

- Date, time, location, and orientation of photograph.
- Name of photographer.
- Location and description of the work.

Construction problems and nonconforming work shall be documented with photographs taken before and after the problem, or when the nonconforming work was corrected. The Contractor shall not cover or backfill piping, fittings, structures, etc., prior to construction photographs having been obtained. Work that has been backfilled prior to photography will require rework by the Contractor at no additional cost to the Owner.

4.3 Test Data Sheets

The QC&A Officer will record all test data results on the test data sheets, examples of which are provided in Appendix A. Independent consultants engaged by the QC&A Officer shall submit their test results or data on forms acceptable to and approved by the QC&A Officer.

4.4 Construction Problem Identification and Design Changes

When deviation from the design plans and specifications or nonconforming work is observed, the QC&A Officer will initially determine the extent of nonconforming work and evaluate if testing errors are present. This evaluation must be cross referenced to laboratory test results, specific test data sheets, and daily Construction Observation Reports to validate or reject the test results. Following the determination that testing errors are not present, the QC&A Officer

will inform the Owner and Contractor of the deficiency. The deficiency may require rework. In certain instances, design modification may be appropriate.

No design changes will be made in the field without approval by the Design Engineer and Owner. Any modifications approved in this manner will be recorded on a field modification form (Appendix A). Any modification request shall include the following:

- Original design given by project plans and specifications.
- Reason(s) for required change in design.
- Proposed design changes including changes in materials, quantities, construction methods, and constructed performance.
- Supporting calculations (if required).

4.5 Document Control and Record Storage

The records maintained during construction activities include, but are not limited to, the following:

- Product submittals
- Daily Construction Observation Report
- Test data sheets from each QC&A Monitor or independent consultants (if any)
- Field Log or other field documentation maintained by each QC&A Monitor
- Field notes from all record surveys
- Lab reports
- Any document required by other sections of this QC&A Plan

The use of electronic field forms is acceptable. All document originals will be stored at the construction site until completion of construction. Copies of all documents will be on file in the office of the QC&A Officer. Field modification forms will be included with the Daily Construction Observation Report.

5. Construction Observation – Survey

At a minimum, the record surveys shall document the following:

- Subbase, Liner, and Cover Systems
  - Subbase of clay liner/top of intermediate cover on 100-foot grid and at grade breaks.
  - Underdrain piping locations and elevations every 50 feet including all fittings.
  - Top of clay liner/infiltration layer on 100-foot grid, grade breaks, and locations of future tie ins. These survey points must match the same survey points as taken for the subbase of clay liner/top of intermediate cover to verify the layer thickness.
  - Leachate collection trench and anchor trench elevations every 25 feet.
  - Geomembrane location information for begin and end seams, cross seams, repairs, destructive tests, anchor trench, connect to existing liners/covers, and locations of future tie-in edges.
  - Top of erosion control layer on 100-foot grid, grade breaks, and locations of future tie-ins. These survey points must match the same survey points as taken for the subbase of clay liner/top of intermediate cover to verify the layer thickness.
- Leachate Collection System
  - Collection pipe locations and elevations every 25 feet including all fittings.
  - Header pipe locations and elevations every 25 feet including all fittings.
  - Locations and elevations of manholes, fittings, cleanouts, valves, and sumps.
  - Top of protective layer on 100-foot grid and grade breaks. These survey points must match the same survey points as taken for the subbase of clay liner/top of intermediate cover to verify the layer thickness.
  - Transfer piping locations and elevations every 25 feet.
- Utilities
  - Location of conduits and buried utilities every 50 feet including all changes in horizontal and vertical alignments.
  - Location of junction boxes and panel locations.
- Vaults and Manholes
  - All pipe inverts, cover, and ground elevations.
  - Pipe penetration invert elevations.

5.1 Tolerances

Tolerances for each phase of construction are listed in Table 5-1. Areas that do not meet the listed tolerances will be regraded or removed and replaced until the tolerances are met and verified by another survey.

Table 5-1
Summary of Tolerances

Item	Tolerance[1]
1. Underdrain System	
a) Bottom of trench	0.0 to - 0.1 ft
b) Piping	0.0 to ± 0.1 ft
2. Clay Liner/Infiltration Layer	
a) Subbase/top of intermediate cover	0.0 to - 0.1 ft
b) Top of clay liner/infiltration layer	0.0 to + 0.1 ft
3. Leachate Collection System	
a) Header, collection, and transfer piping	± 0.05 ft/100 ft
b) Top of protective layer	0.0 to + 0.1 ft
4. Vaults, Manholes	
a) Structure elevations	± 0.1 ft
b) Pipe penetration invert elevations	± 0.05 ft

Notes: Prepared by: TMH
[1] At each survey location. Checked by: ASL
ft = feet

Additionally, the following criteria shall apply:

- The leachate collection system piping shall drain to the sump; low areas shall not be present.
- Compacted clay liner and infiltration layer shall be a minimum of 2.0 feet thick verified by the 100-foot grid survey.
- Protective layer shall be a minimum of 1.0 feet thick (aggregate) or 1.5 (slopes)/ 2.0 (floor) feet (Tire Derived Aggregate [TDA]).
- Tolerances stated in the specifications shall supersede the tolerances in Table 5-1, if different.

6. Construction Components

6.1 Groundwater Underdrain System

6.1.1 Observation

The QC&A Officer shall perform the following functions during construction of the groundwater underdrain system:

- Verify that trenches are constructed to the locations and depths required.
- Review material submittals to verify conformance with the project specifications.
- Observe and document the installation of the piping, bedding, geosynthetics, and backfill to ensure conformance with the project specifications.

6.1.2 Testing and Verification

The pipe bedding material shall be tested by Contractor in accordance with the tests presented in Table 6-1.

Table 6-1
Recompacted Subgrade Quality Testing

Test	Minimum Frequency	Acceptance Test Values
a. Grain Size (ASTM D6913)	2 per source	IDOT Gradation No. 3
b. Hydraulic Conductivity (ASTM D2434)	2 per source	Min. $1x10^{-1}$ cm/sec

ASTM = ASTM International
cm/sec = centimeters per second
IDOT = Iowa Department of Transportation

Prepared by: TMH
Checked by: ASL

Additionally, the following criteria shall apply:

- Pipe bedding shall be noncalcareous.
- Piping shall drain to the groundwater underdrain sump.

6.1.3 Acceptance Criteria

The following criteria shall be completed prior to acceptance of this component by the QC&A Officer. Additional criteria, if described in the plans and specifications, may apply.

- Trenches and piping are constructed and installed allowing groundwater to drain to the underdrain sump location.
- Pipe bedding meets the material and lab testing specifications.
- Pipe bedding and geotextile were installed in conformance with the specifications.
- Backfill is installed to the project specifications.

6.2 Subgrade

6.2.1 Observation

The QC&A Officer shall perform the following functions during subgrade preparation:

- Verify that all trees, stumps, roots, boulders, and debris are removed.
- Verify that placement of frozen soil or soil onto frozen ground does not occur.
- Perform field moisture and density testing per Table 6-2.
- Observe and document proof rolling of the subgrade.
- Verify that the subgrade is constructed and graded to provide a smooth, workable surface on which to construct the liner.

6.2.2 Testing and Verification

The subgrade and all fill materials placed for subgrade (such as underdrain trench backfill, perimeter berm fill materials) shall be tested in accordance with the tests presented in Table 6-2.

Table 6-2
Subgrade Quality Testing

Test	Minimum Frequency	Acceptance Test Values
a. Proctor Density (ASTM D698) and Grain Size (ASTM D6913)	1 each soil type	Not Applicable
b. Field Moisture and Density (ASTM D6938)	50-foot grid/1 foot	95% of Standard Proctor maximum dry density and +/- 3% of optimum moisture
c. Firmness Proof Rolls with CAT 627 or equivalent	on entire subgrade	No rutting >0.5 inch (or QC&A Officer Approval)

Prepared by: TMH
Checked by: ASL

6.2.3 Acceptance Criteria

The following criteria shall be completed prior to acceptance of this component by the QC&A Officer. Additional criteria, if described in the plans and specifications, may apply.

- Deleterious and frozen materials are not present.
- Field moisture and density testing has been completed and met the minimum criteria.
- Proof rolling has been completed, and the subgrade meets the criteria in Table 6-2.
- Survey has been completed verifying that the subgrade surface is within the tolerance in Section 5.

6.3 Clay Liner Borrow Source

Borrow testing for the clay liner will be conducted to ensure suitability of the clay liner material and to develop acceptable ranges of dry density and water content to be used in field testing.

Bulk samples of the clay borrow material shall be collected at a frequency of one bulk sample per 5,000 cubic yards. Samples shall be collected in each material type if different materials are represented in the clay borrow and/or collected from different areas within the borrow to collect representative samples. Bulk samples shall be transported to the laboratory and analyzed as follows:

Table 6-3
Clay Liner Source Quality Testing

Test Description	Test Method	Minimum Frequency	Acceptance Criteria
Grain Size/Hydrometer	ASTM D6913 and D7928	1 per 5,000 CY	No less than 50% by weight passing #200 sieve
Compaction Characteristics, standard effort	ASTM D698	1 per 5,000 CY	NA
Atterberg Limits	ASTM D4318	1 per 5,000 CY	LL ≥25%, PI ≥12%
Hydraulic Conductivity	ASTM D5084	3 per compaction test (see below)	Max $1x10^{-7}$ cm/sec

Prepared by: TMH
Checked by: ASL

CY = cubic yard

After development of the compaction characteristics, the QC&A Officer will select a minimum of two and potentially all the compaction tests on which to perform hydraulic conductivity testing. The selection of any less than all the compaction tests is based on the uniformity of the clay borrow material and should consider the grain size analysis, Atterberg limits, and compaction characteristics.

Hydraulic conductivity tests will be performed on the soil samples. For each bulk sample selected by the QC&A Officer, the lab will compact three soil samples to 95% maximum dry density (standard effort) at three different water contents. The water contents should be at the optimum water content, less than optimum, and greater than optimum.

Using the results of the hydraulic conductivity testing, the QC&A Officer shall determine the acceptable ranges of water content to be used in field moisture/density testing. Samples at 95% maximum dry density with hydraulic conductivity meeting the acceptance criteria are deemed as having an acceptable water content.

6.4 Compacted Clay Liner

6.4.1 Observation

The QC&A Officer shall perform the following functions during compacted clay liner construction:

- Observe and document that the compacted clay liner material is obtained from the approved clay liner borrow source.
- Observe and document that the clay liner is constructed in lifts no thicker than 6 inches after compaction.
- Observe and document that construction methods achieve uniform coverage by compaction equipment, sufficient bonding between lifts, and prevent the incorporation of deleterious materials into the clay liner material.
- Observe and document keyway splicing to existing compacted clay liners.
- Verify that the compacted clay liner is constructed to grades and lines as shown in the project plan set ("Base Grades").
- Verify that the upper layer is prepared to ensure smoothness and has rocks (all angular and > ½-inch) and similar foreign objects removed.
- Collect the soil samples described in Table 6-4 and coordinate transportation to the testing lab.
- Conduct the field moisture density testing per Table 6-4.

The Contractor is responsible for filling test holes with bentonite per the contract documents.

6.4.2 Testing and Verification

The compacted clay liner will be tested in the field and lab. Field testing will be conducted as described in Table 6-4 and meet the minimum specifications developed during the Clay Liner Borrow Source testing. Laboratory samples will be collected using thin-walled (Shelby) tubes for undisturbed samples and will be tested per Table 6-4.

Table 6-4
Compacted Clay Quality Testing

Test Description	Test Method	Minimum Frequency	Acceptance Criteria
In-Place Density/Moisture	ASTM D6938	5 per lift-acre	95% of maximum dry density, water content to be determined
Grain Size/ Hydrometer	ASTM D6913 and D7928	1 per foot-acre	No less than 50% by weight passing #200 sieve
Moisture Content	ASTM D2216	1 per foot-acre	To be determined
Dry Density	ASTM 7263	1 per foot-acre	95% of maximum dry density
Atterberg Limits	ASTM D4318	1 per foot-acre	LL ≥25%, PI ≥12%
Hydraulic Conductivity	ASTM D5084	1 per foot-acre	Max $1x10^{-7}$ cm/sec

Prepared by: TMH
Checked by: ASL

The acceptable values of water content will be determined during the Clay Liner Borrow Source testing and will be based on achieving a hydraulic conductivity of $1x10^{-7}$ cm/sec or less. The dry density (both field and lab testing) will be specified at 95% or greater of the maximum dry density as determined by the Standard Proctor test (ASTM D698). An acceptable range of water content will be determined based on hydraulic conductivity testing as described in Section 6.3.

6.4.3 Acceptance Criteria

The following criteria shall be completed prior to acceptance of this component by the QC&A Officer. Additional criteria, if described in the plans and specifications, may apply.

- Survey has been completed verifying that the compacted clay liner is a minimum of 2-feet thick and meets the tolerance in Table 5.1.
- Uniform compaction effort, lift thickness, and lift bonding were observed and are acceptable.
- Compacted clay liner surface is smooth and free of deleterious material.
- All in-field and laboratory testing has been completed with passing results.
- Any rework has been completed and retested with passing results.
- Test holes have been filled and hydrated.

6.5 Flexible Membrane Liner

6.5.1 Observation and Verification

The QC&A Officer shall perform the following functions during flexible membrane liner (FML) installation:

- Review product submittals for conformance with project specifications.
- Observe the delivery of rolls and record roll and lot numbers. Verify that delivery and storage conditions are in conformance with project specifications.
- Reject any nonconforming or damaged rolls.
- Coordinate conformance testing as required by project specifications.
- Obtain written acceptance of the compacted clay liner for FML placement by the FML installer.
- Verify and document that the installation surface is smooth and free of rocks (all angular and > ½-inch) and other foreign or sharp objects that may damage the liner.
- Observe and document daily equipment testing including but not limited to trial welding. Document the welding equipment calibration and operators.
- Observe and document proper installation of geomembrane panels, including deployment, seam placement, seam preparation, panel welding, repairing, and temporary and permanent anchor systems.

- Observe and document non-destructive testing.
- Identify and mark the location for destructive tests, as described in the project specifications. Observe and document field destructive test samples.
- Observe and document any cuts, tears, holes, or irregularities and the repair of such.
- Observe equipment operation to confirm that none is allowed directly on the geomembrane surface without adequate protection.
- Maintain records on the above items, including product submittals, FML Roll Log, subgrade acceptance, conformance testing data sheets, panel placement log, trial weld log, destructive/non-destructive testing data sheets and reports, installation problem and resolution summaries, photographs, and daily reports.

6.5.2 Field Testing

All FML panels and seams shall meet the specifications and be tested in accordance with the schedule presented in Table 6-5.

Table 6-5
Flexible Membrane Liner Field Quality Testing

Test Description	Test Method	Minimum Frequency	Acceptance Criteria
Thickness	ASTM D5994	5 places per roll	See project specifications
Non-destructive- Seam – air channel	ASTM D5820	All dual wedge seams	<3 psi drop over 5 min
Non-destructive – Seam- vacuum box	ASTM D5641	All extrusion seams	Visual verification
Destructive - Seam Shear Strength	ASTM D6392	1 per 500-ft of seam length[1]	See project specifications
Destructive - Seam Peel Strength	ASTM D6392	1 per 500-ft of seam length[1]	See project specifications

[1] May be changed to 1,000-feet at the discretion of the CQA Officer depending on test results

Prepared by: TMH
Checked by: ASL

Additionally, the following criteria shall apply:

- Destructive testing shall be limited to side slopes in accordance with IAC 567.113.7(6)b.

6.5.3 Acceptance Criteria

The following criteria shall be completed prior to acceptance of this component by the QC&A Officer. Additional criteria, if described in the plans and specifications, may apply.

- Product and manufacturer submittals conform to the project specifications.
- FML material has been delivered and stored according to the project specifications.

- Conformance testing has met the criteria in the project specifications.
- The subgrade was visually observed to be smooth and free of defects, and a subgrade acceptance certificate was provided by the installer.
- The FML was deployed and welded according to the project specifications.
- Daily equipment testing was performed.
- Seam testing, both destructive and non-destructive, was completed at the frequency and met the specified criteria.
- Locations for future tie-ins have been surveyed and protected in accordance with the plans and specifications.
- All nonconforming work has been rectified to the satisfaction of the QC&A Officer.
- All documentation has been received and completed.

6.6 Leachate Collection System

6.6.1 Observation

The QC&A officer shall perform the following functions during construction of the leachate collection system:

- Review product submittals for conformance with project specifications, including geocomposite drainage net, pipe materials, and trench and pipe bedding aggregates.
- Observe and document the installation of geocomposite drainage net.
- Observe and document the welding and installation of the leachate collection piping and sump riser, if present.
- Observe and document the welding and installation of leachate forcemain, if installed, and document the pressure testing of the piping.
- Verify that leachate collection system components are positioned to ensure proper drainage, if required.
- Verify that no foreign objects are present in pipe bedding or the protective layer material.
- Observe and document that the geocomposite drainage net, leachate collection piping, bedding, and protective layer are installed on the FML in a manner so as to prevent damage to the FML.

6.6.2 Testing and Verification

All Leachate Collection System trench and pipe bedding shall be tested in accordance with the schedule presented in Table 6-6.

Table 6-6
Leachate Collection System Trench and Pipe Bedding

Test Description	Test Method	Minimum Frequency	Acceptance Criteria
Grain Size	ASTM D6913	1 per 5,000 cubic yards and at least 1 per source	IDOT Gradation 3
Hydraulic Conductivity	ASTM D5084	1 per 5,000 cubic yards and at least 1 per source	Min. $1x10^{-1}$ cm/sec[1]

[1] Without geosynthetic drainage media.

Prepared by: TMH
Checked by: ASL

Additionally, the following criteria shall apply:

- All coarse aggregate will be of non-calcareous material.
- Piping within the limits of waste must be verified by survey to have a slope of at least 2 percent and no greater than 33 percent.
- Tire Derived Aggregate:

  No more than 5% of the aggregate shall contain bead wire more than ½ inch. Field counts shall occur once every 100-ton delivered per source to up to 500-tons total delivered. If the counts pass the 5% criteria, the counts may be increased to every 500-tons delivered. Counts consist of several random grab samples accumulating to 5-gallons collected. Each chunk of TDA is observed for bead wire not to exceed 5% of the chunks in that 5-gallon sample collected.

6.6.3 Acceptance Criteria

The following criteria shall be completed prior to acceptance of this component by the QC&A Officer. Additional criteria, if described in the plans and specifications, may apply.

- The geocomposite drainage net is installed and tied according to the project specifications.
- The leachate collection sump riser, pump, piping, bedding, forcemain, and any other leachate conveyance components are installed, connected to the existing as required, and functional.
- The protective layer has been installed at the minimum thickness.
- TDA meets the minimum requirements for size and bead wire.

6.7 Final Cover System

The final cover system consists of infiltration layer, erosion layer, and an FML in select areas. For purposes of the QC&A Plan, the components will be observed, tested, and accepted in the same manner as above sections, as described below.

- Subgrade – will be the top of intermediate cover and density and moisture testing of the intermediate cover will not apply. All other provisions from Section 6.2 will apply.
- Infiltration Layer – Development of the clay borrow per Section 6.3 and provisions of Section 6.4 Compacted Clay Liner will apply, except that the clay dry density is required to be at 90% maximum dry density as determined by the Standard Proctor test. The infiltration layer is a minimum of 2.0 feet thick.
- FML – If applicable, the provisions of Section 6.5 will apply.
- Erosion Layer – The erosion layer shall consist of soil material capable of sustaining plant establishment and free of deleterious material. The erosion layer is a minimum of 2.0 feet thick. The erosion layer shall be seeded.

6.7.1 Acceptance Criteria

The following criteria shall be completed prior to acceptance of this component by the QC&A Officer. Additional criteria, if described in the plans and specifications, may apply.

- The intermediate cover is graded smooth and is free of deleterious material.
- Refer to Section 6.4.3 for infiltration layer.
- Refer to Section 6.5.3 for FML, if applicable.
- The erosion layer is placed in an acceptable manner to prevent damage to the FML, if present, and is at the minimum thickness.
- Vegetation is established.

6.8 Other

Construction components not described above may also be subject to project-specific QC&A Plans, such as storm water controls. These project-specific components will be added to the project-specific QC&A plans as necessary. Generally, the QC&A Officer will ensure that products, materials, construction, and installation conform with the project plans and specifications.

7. Construction Observation Report

Upon completion of the construction, the QC&A Officer shall submit a Construction Observation Report to the IDNR. This report contains, at minimum, the following information:

- Contact information for the project team
- Project narrative including narrative of deviations to the approved plans and specifications
- Description of installed materials and equipment
- Field and lab test results and summaries
- Daily reports
- Photographs
- Construction documentation plans
- A signed and sealed statement by the QC&A Officer that the project was completed in accordance with IAC 567.113.7 and the approved plans and specifications.

Appendix A

Examples of Forms

Foth

Trial Weld Testing Summary

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Sample #	Date	Ambient Temp	Time (AM/PM)	Machine Number	Seamer Initials	Extrusion Temp	Fusion Temp/Speed	Peel (ppi)		Shear (ppi)	Results (P/F)	Comments
								Inside	Outside			
						Barrel	Temp.					
						Preheat	Speed					
						Barrel	Temp.					
						Preheat	Speed					
						Barrel	Temp.					
						Preheat	Speed					
						Barrel	Temp.					
						Preheat	Speed					
						Barrel	Temp.					
						Preheat	Speed					
						Barrel	Temp.					
						Preheat	Speed					
						Barrel	Temp.					
						Preheat	Speed					

Foth

Panel Placement Summary

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Panel Number	Date	Time (am/pm)	Roll Number	Type (S or T)	Final Width (Feet)	Final Length (Feet)	Panel Damage (Y/N)	Comments

Foth

Panel Seaming Summary

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Seam Number	Date Seamed	Final Seam Length (feet)	Welder Initials	Weld Type Ext / Wedge	Machine Number	Machine Temp	Machine Speed	Time		Ambient Temp (°F)	Panel Temp	Comments
								Start	Stop			

Foth

Non-Destructive Test Summary

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Seam Number	Date Tested	Location / Seam Length Tested	Air					Vacuum	Tester Initial	Comments
			Air Pressure				Air Test Results (P/F)	Vac. Test Results (P/F)		
			Start		End					
			PSI	Time	PSI	Time				

Foth

Seam Destructive Test Summary - Field

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Sample #	Seam Number	Date	Welder Int.	Mach #	Description of Sample Location	Peel (ppi)		Shear (ppi)	Results (P/F)	Comments
						Inside	Outside			

Foth

Repair Summary

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Repair Number	QA Monitor	Operator/ Mach #	Seam # OR Panel #	Repair Location	Description (patch, bead, ext weld, cap, DS, boot)	Size of Repair	Tester Int	QA Monitor	Date	(P/F)

Foth

Roll Log

Project Name: _____ QC Monitor: _____

Project Number: _____ Material: _____

Date Arrived on Site	QA Monitor	Roll Number	Material	Thickness	Textured (y/n)	Damage/Comments

Client: _____ Project #: _____
Project: _____ Date: _____
Prepared by: _____ Page: _____ of _____

Construction Observation Report

Date: _____

Location: _____

Prepared by: _____

	Temperature (°F)		Sky Conditions	Precipitation (inches)	Precipitation Type (select)		Site Conditions (select)	
WEATHER	**Low**	**High**	(e.g., clear, partly cloudy, or cloudy)		**Rain**	**Snow**	**Dry**	**Muddy**
					☐	☐	☐	☐

Contractors on site *(include no. of personnel per contractor)*:

_____

_____

_____

Other personnel on site: ***Purpose:***

_____ _____

_____ _____

_____ _____

_____ _____

Work observation report, comments:

_____

_____

_____

_____

_____

_____

_____

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:
1. Hydraulic soil stabilizers.
2. Silt fence.
3. Erosion stabilization mat.
4. Temporary ditch checks.
5. Sand bags.
6. Fiber logs.
7. Temporary vegetal cover.

1.2 REFERENCES

A. Iowa Department of Transportation (Iowa DOT), Standard Specifications for Highway and Bridge Construction, most recent series.

B. Iowa Department of Natural Resources (IDNR), Storm Water Discharge Associated with Industrial Activity for Construction activities, most recent series.

C. IDNR, Storm Water Management for Construction Activities, most recent series.

D. ASTM International (ASTM):
1. ASTM D1388 – Standard Test Method for Stiffness of Fabrics.
2. ASTM D2487 – Standard Test Method for Classification of Soils for Engineering Purposes.
3. ASTM D3776 – Standard Test Method for Mass per Unit Area (Weight) of Woven Fabric.
4. ASTM D4355 – Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).
5. ASTM D4491 – Standard Test Method for Water Permeability of Geotextiles by Permittivity.
6. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
7. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile.
8. ASTM D5035 – Standard Test Method for Breaking Strength and Elongation of Textile Fabric (Strip Method).
9. ASTM D5338 – Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials under Controlled Composting Conditions.

1.3 SYSTEM DESCRIPTION

A. Design Requirements
1. Select and design method of erosion and sediment control in accordance with local erosion control ordinances. Follow the State Construction Site Best Management Practices (BMPs).

B. Provide erosion control shown on the Drawings, as a minimum.

C. Provide additional erosion and sediment control to prevent erosion which may be caused due to selected construction methods.

D. All storm water controls for disturbed areas shall be installed prior to earth moving activities and maintained throughout the project.

1.4 SUBMITTALS

A. Manufacturer's certification for manmade products.

1.5 DESCRIPTION

A. Work in this section consists of construction and maintenance of temporary erosion and sediment control measures to be performed prior to and during construction.

B. Contractor shall be responsible for selecting method of erosion and sediment control.

PART 2 - PRODUCTS

2.1 IOWA DOT

A. Erosion Control Materials, Section 4169, Iowa DOT Standard Specification for Highway and Bridge Construction.

2.2 SILT FENCE

A. Geotextile Fabric:
1. Fabric shall be either woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene or polyvinylidene chloride.
2. Fabric shall have the minimum strength values in the weakest principal direction.
3. Non-woven fabric may be needle punched, heat bonded, resin bonded or combination thereof.

4. Fabric shall meet the following requirements:

Grab Tensile Strength	ASTM D4632	101 lb (450 N)
Apparent Opening Size	ASTM D4751	0.3 mm
UV Resistance Strength Retained	ASTM D4355	70 at 500 Hours (%)
Permittivity (per second)	ASTM D4491	0.14

Abbreviations:
% = percent
lb = pounds
mm = millimeter
UV = ultraviolet

B. Support Posts:
1. Wood or steel construction, minimum length 4 feet.
2. Wood posts – 2-inch by 2-inch or equivalent steel posts.

2.3 EROSION STABILIZATION MAT

A. General:
1. Netting, if used, shall not exceed 15% of the total blanket weight.
2. Bond the netting to the parent material to prevent separation for the life of the project (minimum two months).

B. Types
1. Type A:
   a. Used for slopes 2.5:1 or flatter (not to be used in channels).
   b. Minimum shear stress required is 1.0 pound per square feet ($lb/ft^{2)}$ (50 Pascals [Pa]).
   c. Not to be used in channels.
2. Type B:
   a. Used for slopes 2:1 or flatter or in channels when design shear stress is less than the minimum shear stress of the mat used.
   b. Minimum shear stress required is 1.5 lbs/ft^2 (70 Pa).
   c. Channel mat roll width shall be 6 feet (1.8 meters [m]) or greater.
3. Type Urban (Urban Areas and Lawn Areas Where Mowing Will Occur):
   a. Use only 100% organic biodegradable netted products including parent material, stitching and netting.
   b. Minimum thickness shall be 0.375-inch (9 mm) as measured in-place.
   c. Mats placed on slopes greater than 4:1 and up to 2.5:1 shall be double netted.
   d. Netting and installation shall not pose a safety risk to pedestrians walking on or crossing the mat.

C. Anchoring Devices:
1. Anchoring and components for temporary erosion mats shall be completely biodegradable as determined by ASTM D5338.
2. Materials shall be environmentally safe for soil and groundwater.

3. Do not use petroleum-based plastics or composites.
4. Do not use materials that may present a hazard from splintering or spearing.
5. Design anchors to hold a minimum of two months and be substantially degraded within four months during the summer (warm soil conditions).

D. Jute fabric shall meet the following general requirements:
1. Uniform, open weave of single jute yarn.
2. Twisted construction having an average twist of not less than one and one-half turns per inch.
3. Furnished in rolled strips 48 inches wide with a minimum of 78 wrapped ends.
4. Fabric shall have a minimum of 41 weft yarns per linear yard of length.
5. Weight of fabric shall be a minimum of 92 lbs. per 100 square yards.
6. Non-toxic to vegetation.
7. Smolder resistant.

E. Wood fiber blanket shall meet the following general requirements:
1. Uniform web of interlocking wood excelsior fibers.
2. Uniform thickness.
3. Weight – 78 pounds per 80 square yards.
4. Have net backing on one side as follows:
   a. Mesh size not exceeding 1.5 inches by 3 inches.
   b. Woven of twisted paper, cotton cord or biodegradable plastic.
5. Non-toxic to vegetation.

F. Material Properties
1. Porosity: Calculated 85-90%.
2. Stiffness: ASTM D1388 – 2,000 milligrams per centimeter (mg/cm) (maximum).
3. Weight: ASTM D3776 – 18 ounces per square yard (oz/s.y.)
4. Tensile Strength: ASTM D5035 (2-inch strip).
   a. Length Direction: 15 lb
   b. Width Direction: 5 lb
5. Elongation ASTM D5035 (2 inch strip).
   a. Length Direction 150%
   b. Width Direction 100%
6. Use flexible mat of polyvinylchloride monofilaments bonded together into a three-dimensional web designed exclusively to serve as an erosion control and revegetation mat.

G. Staples:
1. Staples for anchoring erosion mat shall meet the following minimum requirements:
   a. U-shaped.
   b. No. 11 gage or larger diameter steel wire.
   c. Width of 1 to 2 inches.
   d. Length:
      1) Not less than 6 inches for firm soil.

2) Not less than 12 inches for soft or loose soils.
3) Not less than 8 inches where erosion mat is placed over sod.

2. Pins shall have a 0.1875-inch shank diameter with attached 1.5-inch washer.
3. Staples shall have a 0.75-inch shank diameter with a 1-inch minimum top width.

2.4 TEMPORARY DITCH CHECKS

G. Make Temporary Ditch Checks (TDCs) of materials that are either biodegradable, that can be removed during long-term erosion control construction activities, or that will not conflict with long-term erosion and sediment control structures if left in-place.

H. Submit a list of TDC materials to the Engineer for review.

2.5 SAND BAGS

G. Sand Bags:
1. Minimum unfilled size of 16 by 26 inches.
2. Completely filled with a granular soil (P200 less than [<]50%).

2.6 FIBER LOG

G. Erosion Bales:
1. Tightly compacted bales of grain straw or hay.
2. Use straw, if required to function for more than 15 days.

H. Support Post:
1. Wood or steel construction, minimum length 4 feet.
2. Wood posts – 2-inch by 2-inch or equivalent steel posts.

2.7 TEMPORARY VEGETAL COVER

G. Temporary Seed Mixture Components

Species	Min. % Purity	Min. % Germ.	Lb per Acre
Oats	98	90	80
Rye	98	85	100

Abbreviation:
Min. = minimum

H. Use rye grass when permanent seeding is to follow within one year.

I. Hydroseeding – Submit seed mix, application methods and emulsion specification to Engineer for approval prior to application.

J. Contractor may use Iowa DOT mix “Stabilization Crop Seed Mixture” in accordance with the seeding schedule in Table 2601.03-5.

PART 3 - EXECUTION

3.1 GENERAL

A. Keep disturbed areas to a minimum.

B. Provide sediment control on unbroken slopes greater than 75 feet in length or 3:1 or steeper.

C. Sediment control practices must be in place on all downgradient perimeters prior to any upgradient land disturbing activities.

D. Stabilize and protect disturbed areas with temporary seed and mulch within seven days of active disturbance of the soil surface.

E. Place excavated trench material on the high side of the trench, where appropriate.

F. Discharge trench water to filter barrier prior to release into a drainage way.

G. Install gravel mats at site vehicle entrance and site exit locations to prevent tracking of soil.

H. Collect tracked soil and clean from paved roads near the construction site the same day it occurs.

I. Sediment control measures shall be in place at the end of each working day.

J. Locate soil stockpiles no closer than 25 feet of a roadway, wetland, or drainage control channel and control by covering the pile with tarpaulins, temporary seed and mulch or other suitable means, if the pile is exposed for 14 days or more.

K. Protect storm inlets including inlets in paved roadways with suitable approved barriers.

L. When it is necessary to cross waterways, provide crossing structures for machinery.

M. Repair, replace, and maintain erosion and sedimentation structures until vegetation is re-established or permanent structures are installed.

N. Remove temporary erosion control structures and accumulated sediment and/or debris when vegetation is established.

O. Seeding shall be completed before September 30.

3.2 EROSION AND SEDIMENTATION CONTROL DEVICES

A. Erosion Bales:
1. Place where shown on the Drawings at a minimum.
2. Place bales or bags end to end across surface water flow path.
3. Place bales or bags at right angles to the direction of water flow.
4. Embed and securely anchor bales with wood or steel stakes or posts.
5. Excavate shallow sump on the upstream side of bales or bags.
6. Place bales so that the bindings are oriented around the sides rather than on top and bottom.
7. Wedge gaps between bales with straw to prevent water from flowing between bales.
8. Entrench straw bales fence or sand bags at least 4 inches into the ground. Slope up the upslope side of fence to the bales at least 4 inches.
9. Place bales or bags prior to disturbing upslope areas.
10. Drive support posts a minimum of 12 inches into the subgrade and extend to the top of the bales or bags.
11. Remove from the site after final stabilization.

B. Erosion Bags:
1. Place type (sand or rock filled) where shown on the Drawings at a minimum.
2. Place bags end-to-end across surface water flow path.
3. Place bags at right angles to the direction of water flow.
4. Excavate shallow sump on the upstream side of bags.
5. Entrench bags at least 4 inches into the ground.
6. Place bags prior to disturbing upslope areas.
7. Drive support posts a minimum of 12 inches into the subgrade and extend to the top of the bags.
8. Remove from the site after final stabilization.

C. Silt Fences:
1. Place geotextile (silt) fence prior to disturbing upslope areas.
2. Excavate trench approximately 4 inches by 4 inches along perimeter of area to be fenced.
3. Secure and continuously anchor bottom of geotextile (silt) fence with excavated material in trench bottom.
4. Install support post on downstream side of the geotextile to a depth adequate to stabilize geotextile fence (12-inch minimum depth).
5. Secure geotextile to posts.
   a. Staples: 0.5-inch deep.
   b. Staple to up slope side of post.
6. Backfill over geotextile in trench and compact.
7. Maximum spacing of the posts shall not exceed 10 linear feet.

D. Erosion Mats:
   1. Installation:
      a. See plan details for anchor trench (at ends, checks, and edges) installation procedures.
         1) Anchor trenches shall be 12 inches deep.
         2) Compact anchor trench backfill.
         3) Place staples in end and check trenches spaced at 12 inches.
      b. Follow manufacturer's specifications and instructions for placement unless project documents are more stringent.
      c. Roll width overlaps shall be 12 inches at edges. Pin or staple every 3 feet along overlap length.
      d. Roll end overlaps may be spliced by overlapping (in the direction of water flow) two feet with the upstream portion of the mat on top of the downstream portion. This overlap shall receive at least three pins or staples with a maximum spacing of 12 inches.
      e. Pins or staples shall be 18 inches in length, minimum, driven flush with the mat.
      f. Place mat flat conforming to contours in soil surface. Do not stretch mat.
      g. Place mat from toe of slope toward top of slope.
      h. Mat can be placed from downstream toward upstream or from upstream toward downstream.
   2. Site Preparation (See also Section 31 25 00, Erosion and Sediment Control [Iowa])):
      a. Place seed and fertilizer prior to placing permanent erosion geomat.
      b. Seed and fertilizer may be placed after permanent erosion mat installation with Engineer’s approval.
      c. Ground surface shall be smooth and compact.
      d. Remove all rocks, dirt clods, stumps, roots, grass clumps, trash, and other obstructions from lying in direct contact with the soil surface and the erosion mat.

E. Soil Stabilizers – Hydroseeding:
   1. Installation:
      a. Install soil stabilizers using conventional hydraulic seeding equipment.
      b. Follow manufacturer’s recommendations for application rates.
      c. Application of polyacrylamide (PAM), in its pure form, shall not exceed 200 pounds per acre (lb/acre) (225 kilograms per hectare [kg/ha]).
      d. Do not use asphalt-based products as soil stabilizers.
      e. Do not place soil stabilizers in channels.

F. Temporary Ditch Checks:
   1. Installation:
      a. TDC shall be capable of maintaining location and form during and after rainfall events.
      b. TDC shall be placed at locations shown on the Drawings.

c. Place TDC generally perpendicular to the flow line of the ditch and extend far enough so the ground level on the ends of the TDC are a minimum 18 inches higher than the flow line.

3.3 MAINTENANCE

A. Inspect silt fences and filter barriers immediately after each rainfall and at least daily during prolonged rainfall.
   1. Make any required repairs immediately.
   2. Maintain temporary erosion and sedimentation control structures until permanent soil erosion controls are completed and/or vegetation is established.
      a. Repair damaged structures.
      b. Replace lost structures.
      c. Remove sediment from deposition areas adjacent to erosion control structures without damaging structures on a regular basis.
      d. Refill eroded areas as required for grade stabilization.

B. If the fabric on a silt fence or filter barrier decomposes or becomes ineffective prior to the end of the expected usable life and the barrier still be necessary, replace the fabric promptly.

C. Remove sediment deposits after each major storm event and when deposits reach approximately one-half the height of the barrier.

D. Remove any sediment deposits remaining in place after the silt fence or filter barrier is no longer required and dress to conform to the existing grade, prepared and seeded.

E. Repair/restore any washed out areas.

F. Maintenance period to be entire project period including the one-year warranty.

G. Owner may direct Contractor to remove the temporary erosion control measures any time during the one-year correction period.

H. Construct permanent erosion control measures immediately after earthwork is completed.

I. Maintenance of erosion control methods shall be conducted throughout the contract period and during any times when the Contractor has temporarily demobilized (e.g., winter).

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Engineering Surveys provided by the Owner's Surveyor.
2. Engineering Surveys provided by the Contractor.
3. Profile and Topography shown on the Drawings.
4. Record Measurements and Markers.

1.2 SUBMITTALS

A. Provide record measurements of facilities as installed or constructed in one or more CAD files including the components:
1. Record measurement of top of subgrade (base of clay liner).
2. Record measurement of underdrain trenches, piping, and sump installed.
3. Record measurement of top of compacted clay liner.
4. Record measurement of geomembrane installed including all seams and patches.
5. Record measurement of leachate collection system piping.
6. Record measurements of top of protective layer.
7. Record measurements of the permanent anchor trenches.
8. Record the north limit of compacted clay liner.
9. Record measurements of the future tie in location for Cell 13.
10. Record all repairs, seams, and other construction features to adequately complete accurate "as-built" drawings of the construction.

1.3 LAND SURVEYOR

A. Provide a Land Surveyor licensed in the State of Iowa and acceptable to Owner to perform all measurements for the determination of pay quantities and construction record drawings.
B. Cost of the Land Surveyor shall be borne by Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. Investigate and verify the existence and location of site improvements, utilities, and other existing facilities.

B. Before construction, verify the location of points of connection to Cell 9 underdrain system, liner system, and leachate collection system, connection to the liner system of Cell 2, and connection to the gas header pipe.

C. Furnish information to the Engineer and the appropriate utility regarding conflicts that are necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction.

3.2 ENGINEERING SURVEYS PROVIDED BY THE OWNER'S SURVEYOR

A. General:
1. Establish benchmarks for construction as shown on the drawings.
2. Establish control points as shown on the drawings.
3. Provide most recent existing conditions map.
4. Preconstruction topographic survey of the project area including Cell 10, stormwater area, and soil stockpile.

3.3 ENGINEERING SURVEYS TO BE PROVIDED BY THE CONTRACTOR

A. General:
1. Establish and maintain construction staking as necessary for detailed execution of the work.
2. Design drawings will be provided to Contractor in CAD format.
3. Locate, preserve, and protect property corners and section corner monuments. If moved or destroyed due to Contractor negligence, replace in accordance with state requirements.
4. Before beginning with necessary construction staking, verify the information shown on the Drawings, in relation to the established bench marks, control points and property corners. Notify the Engineer of any discrepancies.
5. Cost of construction staking shall be borne by Contractor.

B. Soil Surveys:
1. Existing conditions at the site were surveyed in 2024. The horizontal control is referenced to the NAD 83 Iowa State Plane Coordinate System (Iowa South Zone). The vertical control is referenced to NAVD88.
2. Record elevations at the proposed top of compacted clay liner. When the proposed top of compacted clay liner is reached, the area is to be surveyed.

3. Record elevations at base of compacted clay liner. Provide survey data to verify bottom of compacted clay liner (top of subbase) (see Section 31 35 26, Clay Liner Construction - Landfill).
4. All soil survey data will use the staking pattern established in the Drawings. Each data point collected will have horizontal and vertical coordinates and elevations. Benchmarks and control points at the site will be provided by the Engineer.

C. Subbase, Clay Liner, Liner Protective Layer, Leachate Collection Line:
1. Provide any intermediate construction reference points as required to verify installation at the line and grade established and locate appurtenant structures.
2. Check the line and grade with the construction reference stakes at each pipe length.

D. Subbase, Clay Liner, Liner Protective Layer:
1. Provide construction reference stakes set for subbase, clay liner and drainage layer at critical changes in horizontal and vertical alignment (breaklines) and on a maximum of a 50-foot grid.
2. Provide 25-foot offset stakes at limits of liner construction on a maximum of a 100-foot grid.

E. Leachate Collection:
1. Provide location and elevation surveys, at a maximum of 25-foot stations within a straight line for all collection and transfer piping.
2. Provide location and elevation surveys for manhole structures.
3. Provide offset stakes as directed by the Owner's Representative.

F. 60-mil High-Density Polyethylene (HDPE) Geomembrane:
1. Provide construction reference stakes for location of construction limits.
2. Provide construction reference stakes to establish a reference line from which existing geomembrane can be located.
3. Provide benchmarks as requested by the Owner's Representative.
4. Provide survey data for all seams, patches, repairs, and other details as directed by the Engineer.
5. Survey HDPE geomembrane from inside of the anchor trench to the toe of the tie-in berm for payment purposes.

G. Auto Shredder Residue (ASR):
1. Provide "as built" survey of the top of the liner protective layer.
2. All soil survey data will use the staking pattern established in the Drawings.
3. All survey points shall contain a horizontal, vertical, and elevation component based on control.
4. The survey is to certify protective layer thickness.

H. As-built Surveys:
1. Subbase- 100-foot grid.
2. Underdrain trenches and sump corners

3. Clay Liner– 100-foot grid.
4. HDPE Geomembrane – seams, patches, and extents of geomembrane.
5. Liner Protective Layer – 100-foot grid.
6. Underdrain, leachate and gas header piping – every 25 feet of pipe.
7. Stockpile 2 – 100-foot grid.
8. Overall as-built within construction limits – 100-foot grid with breaklines.

3.4 PROFILE AND TOPOGRAPHY SHOWN ON THE DRAWINGS

A. Contours or profiles of the ground are shown on the drawings. These profiles and contours are reasonably correct, but are not guaranteed to be absolutely so, and together with any schedule of quantities are presented only as an approximation.

3.5 RECORD MEASUREMENTS AND MARKERS

A. Provide record survey information of the as-constructed facilities showing the horizontal and vertical locations of subbase, top of clay, leachate collection lines, geomembrane installation, drainage layer, and other features which are covered when construction is complete. Locations of documentation to have same frequency and maximum grid size as staking.

B. ASR Protective Layer:
1. Protective Layer shall be surveyed by Contractor's surveyor.

C. Leachate Collection Line:
1. At a minimum, provide a record survey at 25-foot intervals, recording the horizontal and vertical location of the following for all leachate lines:
   a. Covered work that deviates from the Drawings.
   b. Shoulders of trench.
   c. Bottom of trench.
   d. Changes in direction.
   e. Top and invert.
   f. Valves "Y" and "T" locations.

D. 60-mil HDPE Geomembrane
1. At a minimum, provide a record survey recording the horizontal and vertical location of the following geomembrane components:
   a. Panel seams.
   b. Geomembrane footprint from inside the anchor trench to toe of tie in berm. 100 feet, minimum.
   c. Repair locations, test locations, cap strips.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Substantial Completion
   2. Final Completion
   3. Inspection Procedures
   4. Project Record Documents.
   5. Warranties
   6. Instruction of Owner's Personnel
   7. Final Cleaning

1.2 SUBSTANTIAL COMPLETION

A. Before notification that the Work is substantially complete, provide the following:
   1. Demonstrate to the Engineer that systems and system components operate as intended.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Prepare and submit Project Record Documents, operation and maintenance manuals, construction photographs, damage or settlement surveys, property surveys, and similar final record information.
   6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems.
   9. Submit test/adjust/balance records.
   10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   11. Advise Owner of changeover in heat and other utilities.
   12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   13. Complete final cleaning requirements, including touchup painting.
   14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Submit written notification to Owner and Engineer that the entire Work is ready for its intended use and the entire Work is substantially complete.
   1. If the items in paragraph A. above are complete, then within 14 days Owner, Contractor and Engineer will make an inspection of the Work to determine status of completion.
   2. If Engineer considers the Work substantially complete, then Engineer will prepare and deliver to the Owner a tentative Certificate of Substantial Completion fixing the date of Substantial Completion with an attached tentative list of items to be completed or corrected before final payment.
   3. Engineer will issue a definitive Certificate of Substantial Completion with list of items to be completed or corrected or notify Contractor that the Work is not substantially complete within 21 days after submittal to Owner.
   4. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
   5. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Before requesting final inspection for determining final completion, complete the following:
   1. Items identified as requiring correction or completion.
   2. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Submit a written notice that the entire Work is complete. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements.
   1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 PROJECT RECORD DOCUMENTS

A. Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record documents for Engineer’s reference during normal working hours.

B. Maintain and submit one set of black-line white prints of Contract Drawings and Shop Drawings.
   1. Mark record drawings to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, Subcontractor, or similar entity, to prepare the marked-up record drawings.
      a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.

b. Accurately record information in an understandable drawing technique.
c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
d. Mark contract drawings or shop drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where shop drawings are marked, show cross-reference on contract drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
3. Mark important additional information that was either shown schematically or omitted from original Drawings.
4. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.5 WARRANTIES

A. Submit written warranties for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Submit properly executed warranties of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½ by 11 inch 115-by-280-mm paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning
   1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
      a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
      b. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
      c. Remove tools, construction equipment, machinery, and surplus material from Project site.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Throughout progress of the Work, maintain an accurate record of changes in the Contract Documents.

B. Maintain at site one record copy of:
1. Drawings
2. Project Manual
3. Addenda
4. Change Orders and other modifications to Contract.
5. Engineer Field Orders, written instructions or clarifications.
6. Approved submittals.
7. Field test records.
8. Construction photographs.
9. Associated permits.
10. Certificates of inspection and approvals.

1.2 SUBMITTAL

A. At Substantial Completion deliver one marked up set of Drawings to Engineer for use in preparation of record drawings.

B. Prior to submitting request for final payment, submit the final Project Record Documents to Engineer for Owner.

C. Accompany submittals with transmittal letter containing the following:
1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title of record document.
5. Signature of Contractor or authorized representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.
   1. Provide files and racks for storage of documents.
   2. Provide secure storage space for storage of samples.

B. Maintain documents in clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

C. Label each document "Project Record" in neat, large letters.

D. Make documents and samples available for inspection by Engineer and Owner.

E. Failure to properly maintain record documents may be reason to delay a portion of progress payments until records comply with Contract Documents.

3.2 RECORD DOCUMENTS

A. Maintain record set of Drawings and Specifications legibly annotated to show all changes made during construction.

B. Record information concurrently with construction progress.

C. Drawings
   1. Graphically depict changes by modifying or adding to plans, details, sections, elevations or schedules.
   2. Using a colored pencil or pen, clearly describe the changes by graphic line and note as required.
   3. Note the following:
      a. Depths of various elements of foundation in relation to finished first floor elevation.
      b. Horizontal and vertical locations of underground utilities and appurtenances, referenced to visible and accessible features.
      c. Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features.
      d. Field changes.
      e. Details not on original Drawings.
      f. Location and identification of exposed interior piping, including those shown schematically on Drawings.
      g. Size of equipment and location including connections.
      h. Horizontal and vertical locations and size of underground cable, conduit, and duct runs dimensioned from established and visible features.
      i. Plan location and size of interior concealed and exposed electrical feeders.

j. Size and location of electrical access panels.
k. Departures from original Drawings.

END OF SECTION

SECTION 31 05 10

SOILS AND AGGREGATES FOR EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Engineered soils and aggregates materials
2. Iowa Department of Transportation (IDOT) classifications

1.2 REFERENCES

A. ASTM International (ASTM)
1. ASTM C33 – Standard Specification for Concrete Aggregates.
2. ASTM D75 – Standard Test Method for Sampling Aggregates.
3. ASTM C88 – Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
4. ASTM C131 – Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
5. ASTM C535 – Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
6. ASTM C602 – Standard Specification for Agricultural Liming Materials.
7. ASTM D422 – Standard Test Method for Particle Size Analysis of Soils.
8. ASTM D448 – Standard Specification for Standard Sizes of Coarse Aggregate for Highway Construction.
9. ASTM D1140 – Standard Test Method for Amount of Material in Soils Finer than the No. 200 (75 micrometers [μm]) Sieve.
10. ASTM D1241 – Standard Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses.
11. ASTM D2216 – Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures.
12. ASTM D2434 – Standard Test Method for Permeability of Granular Soils
13. ASTM D2487 – Standard Test Method for Classification of Soils for Engineering Purposes.
14. ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity of Soils.
15. ASTM D6913-17 Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
16. ASTM D7928-17 – Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis

B. Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, (IDOT Standard Specification)

1.3 SUBMITTALS

A. Provide test reports showing the results of required material testing.

B. Soils analysis including recommendations for fertilizer type and application.

C. Daily delivery tickets for each load of material delivered to the site.

1.4 QUALITY ASSURANCE

A. An independent testing laboratory to provide testing services required by this section.

PART 2 - PRODUCTS

2.1 ON-SITE SOILS

A. Clay Soil
1. See Section 31 35 26 Clay Liner Construction.

B. Topsoil
1. Topsoil shall be defined as the upper soil horizon consisting of mineral layers of maximum humus (organic) accumulation.
2. Topsoil shall:
   a. Have adequate mineral content to support the growth of the vegetation intended to be established.
   b. Have one of the following Soil Conservation Service (SCS) soil textures: loam, sandy loam, silt loam, silty clay loam, or clay loam.
   c. Be free from herbicides which would be detrimental for the intended use.
   d. Have adequate fertility for quick establishment of vegetation
   e. Shall be neither excessively acid nor excessively alkaline.
   f. Shall be free from deleterious substances.

C. General Fill
1. Shall be any soil material excavated on the project site or obtained from borrow areas.
2. Soil materials unsuitable and, therefore, not approved for this classification are:
   a. Soils with high organic contents such as topsoil, peat, muck, organic silts, and clays, marls, etc.
   b. Manmade or rubble filled soils containing such materials as: foundry sand, fly ash cinders, asphalt, and concrete rubble, etc.
   c. Silty soils such as: rock flour, loess, etc.
   d. Soils with gravel larger than 2-inch.
   e. Silty clay or clays with a high plasticity (CH soils as defined in ASTM D2487).
   f. All soil contaminated with hazardous waste materials as defined by the United States Environmental Protection Agency (USEPA).

D. Structural Fill
   1. Same as General Fill except shall be suitable for compacting under roadways, landfill, as stormwater pond berms to 95% Standard Proctor.

2.2 IOWA DEPARTMENT OF TRANSPORTATION CLASSIFICATION

A. Aggregate for Surface or Base Course
   1. Aggregate for surface or base course shall be in conformance with IDOT Standard Specification, Section 4120. All testing and quality control required by IDOT Standard Specification shall be completed and submitted to the Engineer.
   2. Gradation shall be specified on the Drawings and conform to the gradations in the Aggregate Gradation Table in the IDOT Standard Specification (Article 4109). Surface aggregate shall be Gradation 11 and base course shall be gradation 13.

B. Revetment Stone, Erosion and Gabion Stone
   1. Revetment stone shall be in accordance with IDOT Standard Specification, Section 4130
   2. Gradation
      a. Class A revetment stone shall be in accordance with IDOT Standard Specification Section 4130.02 A.1.
      b. Class B revetment stone shall be in accordance with IDOT Standard Specification Section 4130.02 A.2.
      c. Class C revetment stone shall be in accordance with IDOT Standard Specification Section 4130.02 A.3.
      d. Class D and E revetment stone shall be in accordance with IDOT Standard Specification Section 4130.02 A.4.
      e. Erosion stone gradation shall be in accordance with IDOT Standard Specification Section 4130.04
      f. Gabion stone shall be in accordance with IDOT Standard Specification Section 4130.07

2.3 SOURCE QUALITY CONTROL

A. For IDOT materials complete all tests as required by IDOT Standard Specifications and submit to Engineer.

B. In addition to the above, furnish a soil analysis of topsoil:
   1. Analyze for the following:
      a. pH
      b. Phosphorus
      c. Potassium
      d. Soluble Salts
      e. Calcium
      f. Magnesium

C. Perform one acceptable test for each type of material at each source. More frequent testing may be required per the construction quality assurance document. Contractor shall perform the maximum amount of testing where specified.

PART 3 - EXECUTION

3.1 APPLICATION

A. Use the soil classification as specified or stated on Drawings.

B. Place material in accordance with the Drawings and appropriate specification sections for the type of work being performed.

C. If material is not specified on Drawings, submit appropriate recommended material gradation to Engineer.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Clearing, grubbing, and disposal.
   2. Stripping and stockpiling topsoil.
   3. Regulatory: Clearing to be completed prior to March 31.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil
   1. Topsoil is defined as the upper soil horizon consisting of mineral layers of maximum humus (organic) accumulation.

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect bench marks, survey ties, and existing structures from damage or displacement.

B. Prevent obstruction of traffic and protect all remaining trees, shrubs, and other vegetation from injury.

C. Conduct tree clearing prior to March 31 in accordance with the landfill permit to protect the habitat of the endangered Indiana bat.

3.2 CLEARING, GRUBBING, AND DISPOSAL

A. General
Clear and grub the area of construction as identified on the drawings.

B. Clearing
Cut all brush, shrubs, stumps and trees to within 4 inches of the existing ground surface.

C. Grubbing
   1. Remove all stumps, roots, logs, and timber.
   2. Grubbing shall be carried to a minimum depth of 12 inches.

D. Disposal
   1. Contractor is responsible for the following:
      a. Disposal of all material removed under clearing and grubbing.
      b. Furnishing of a disposal site.
      c. Obtain and conform to all necessary, federal, state, and local permits for burning and/or burial of material.
      d. Conform to all requirements for disposal of diseased trees.
      e. If permits are not required, Contractor shall comply with the following requirements:
         1) Cover disposal material in a manner that shall minimize future cover settlement.
         2) Maintain a minimum of 2 feet of soil cover.
      f. Bury non-burnable materials in the area designated, if shown on the drawings.
         1) Bury sufficient depth to maintain a minimum of 2 feet of soil cover.
         2) Replace soil and compact in accordance with section "Earthwork."
         3) Replace topsoil, seed, fertilize and mulch in accordance with the applicable section.

E. Clearing operations shall be completed in a manner so as to prevent obstruction of traffic and to protect all remaining trees, shrubs, and other vegetation from injury.

3.3 STRIPPING AND STOCKPILING TOPSOIL

A. Stripping
   1. Remove all topsoil beneath:
      a. Landfill cells.
      b. Roadways.
      c. Stormwater basins.
   2. Remove topsoil to a depth of 6 inches in:
      a. Areas disturbed by utility construction.
      b. Areas requiring cuts or significant fills (significant fills are fills which cannot be obtained by the addition of topsoil only).

B. Stockpiling
   1. Contractor shall stockpile topsoil obtained in the stripping operation for replacement. Coordinate stockpile location with Owner if the stockpile is permanent.
      a. For areas where topsoil is to be replaced after underground utility construction.
      b. For areas involving site grading where topsoil is to be replaced in order to sustain vegetative growth.
   2. In areas where topsoil will not be required as specified above, Contractor shall remove and dispose of excess material as defined in other sections.

END OF SECTION

SECTION 31 22 00

GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
   1. Excavation.
   2. Test rolling.
   3. Filling and compacting.
   4. Backfilling around structures.
   5. Disposal of surplus materials.
   6. Finish grading.
   7. Material Testing.

B. Section Excludes
   1. All clay material placed within the landfill cell boundary.
      See Spec Section 31 35 26.13

1.2 REFERENCES

A. ASTM International (ASTM)
   1. D1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-pound (lb) (4.54 kilogram [kg]) Rammer and 18-inch (in.) (457 millimeter [mm]) Drop.
   2. D2216 – Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures.
   3. D6938-07 – Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Soil used for backfilling shall be classified as General Fill or Structural Fill per the appropriate specification and placed as indicated in the Drawings. Where not indicated, Structural Fill shall be used.

2.2 GRADING EQUIPMENT

A. Grading equipment used for final grading shall be equipped with global positioning system (GPS) equipment to control the grade. Design information will be provided by the Owner suitable for input into most GPS equipment.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Excavation to Correct Grade
   1. Excavate site as follows:
      a. To elevation shown on the plans.
      b. To such additional width as necessary for erections and removal of forms, shoring or sheeting, and finishing of walls.
   2. Excavation of unsuitable materials.
      a. Excavate unsuitable soil materials under a proposed structure.
      b. Extend excavation laterally a minimum of 5 feet beyond the building limits plus 1 foot for each foot of cut below the foundation.
      c. Notify the Owner's project representative prior to proceeding with the removal of unsuitable material.

B. Excavation Precautions
   1. Excavation Slope Stability:
      a. Maintain excavation slope to ensure a stable excavation and prevent caving.
      b. Provide and erect all timber work, shoring, sheeting, bracing, etc. necessary to prevent caving and displacement of adjacent property.
         1) Shoring shall be placed so as not to interfere with building work.
         2) Shoring shall be independent of footings.
   2. Underpinning Existing Structures:
      a. Underpin as necessary to protect existing structures and foundations.
      b. Furnish all material, labor, and equipment necessary to complete underpinning operations.
   3. Dewatering of Excavations:
      a. Provide and maintain all equipment necessary to keep excavated areas free of all groundwater, surface water, or precipitation.
      b. Soil which becomes soft, yielding, or loses support due to inadequate dewatering efforts shall be dealt with as follows:
         1) Excavate disturbed soil materials for their entire depth.
         2) Replace excavated materials with an approved fill material.
   4. Protect Excavation from Freezing:
      a. Take precautions necessary to prevent frost from entering subgrade soils.
      b. If subgrade becomes frozen, remove snow, ice, and frozen soil prior to placement of additional fill or finish surfacings.

3.2 TEST ROLLING

A. Test roll finished cut or fill subgrades by rolling with a pneumatic tire roller or a heavyweight loader rubber tire vehicle.
   1. Method and equipment used shall be suitable for intended use.
   2. Take necessary precautions to protect existing structures from damage during test rolling.

3. Test roll an area equal to the area of the proposed construction plus a minimum of 3 feet on each side.

B. Treat areas showing yielding or rutting under test rolling as follows:
1. Replace and/or recompact as necessary to stabilize the area.
2. Retest soil areas replaced or recompacted.

3.3 FILLING AND COMPACTING

A. Layer thickness for fill soil shall be as follows:
1. Layer thickness shall be dependent on the soil classification type, weight, and soil contact pressure of compaction equipment being used.
2. Layer thickness shall not exceed 12 inches.

B. Compaction
1. Compaction method for fill soils shall be appropriate for soil material being compacted and provide sufficient soil contact pressure to thoroughly compact entire lift thickness.

C. Proper soil moisture contents for compaction shall be maintained in all soils.
1. Optimum moisture content as determined by standard (ASTM D698) Proctor shall be used to determine acceptance moisture contents for soil compaction.
2. Water content for Structural Fill shall be +/- 2% of optimum moisture.

D. Compaction requirements for Structural Fill unless specified elsewhere shall be 95% Standard Proctor.

E. Soil classes not requiring compaction by the above schedule will be proof rolled when requested by the Owner's Representative.

F. Density testing will be performed by the Engineer.

G. Recompact any areas not meeting density requirements.

3.4 BACKFILLING AROUND STRUCTURES

A. Do not backfill any foundation, wall, or structure prior to inspection by the Engineer.

3.5 DISPOSAL OF SURPLUS MATERIALS

A. Haul and dispose of all surplus materials.

B. Surplus materials shall be hauled and placed in the appropriate stockpile locations at the direction of the Owner.

3.6 FINISH GRADING

A. Grade, trim, and shape subgrade to required grade and section.
   1. Adjust slopes by grading so that transition is smooth and gradual.
   2. The crests of cut banks shall be rounded and shaped.
   3. Refill, regrade and compact washouts and ruts.
   4. Remove all stones 4 inches or larger from grading limits.

B. Vertical Grading Tolerances
   1. Areas within the limits of the clay liner – 0.0 feet to -0.2 feet.
   2. Areas outside the limits of the clay liner – +0.2 feet to -0.2 feet.

END OF SECTION

SECTION 31 23 33

TRENCHING, BACKFILLING, AND COMPACTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Dewatering.
2. Disposal of surplus material.
3. Sheeting and bracing.
4. Supporting of existing structures.
5. Trenching, backfilling and compacting.
6. Materials testing.

B. This section applies to below ground pressure and gravity pipelines.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM D698 – Standard Testing Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft –lbs/ft^3) (2700 kN -m/m^3)
2. ASTM D6938 – Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.3 QUALITY ASSURANCE

A. Owner will conduct material testing on Owner-provided materials.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Conform to Section 31 05 10, Soils and Aggregates for Earthwork.

B. General Fill and Structural Fill
1. Unless otherwise specified, use native excavated material as backfill material.

C. Drainage Material for Underdrain and Leachate Systems
1. Provided by Owner.
2. Use where stated on the Drawings or where stated elsewhere.

D. Iowa Department of Transportation (IDOT) Classification
1. Conform to Section 31 05 10, Soils and Aggregates for Earthwork

PART 3 - EXECUTION

3.1 DEWATERING

A. Provide and maintain necessary means and methods to dewater excavations as required, including equipment, power, and permits, until completion of trench backfill.

B. Dispose of water as directed by the Owner.

C. Prevent runoff and dewatering system discharge from entering excavation.

3.2 TRENCH EXCAVATION

A. Excavate trench to sufficient width and depth to permit proper utility construction at line and grade shown on the drawings.

B. Employ methods other than blasting to excavate bedrock, if encountered, from the trench. Notify Engineer if bedrock is encountered.

C. The bottom of the excavation shall conform to the pipe embedment details with a minimum width of the pipe per the Drawings.

D. Do not open more than 200 feet of trench at any one time.

E. Place excavated material in a location that will minimize inconvenience to public travel, adjacent property owners and other contractors.

F. Dispose excess material along with other excavated native material.

G. Sheeting and Bracing
   1. Sheet and brace trenches and excavations as required by applicable federal and state codes, by the Contract Documents, and as necessary to protect life and property.
      a. When close sheeting is required, prevent soil from entering the trench either below or through such sheeting.
   2. Removal of Sheeting and Bracing:
      a. Remove sheeting and bracing as the excavation is backfilled in such a manner to avoid disturbance of adjacent structures and to insure adequate protection of the completed pipe section.
      b. If the sheeting and bracing cannot be removed without damage to the pipe or adjacent areas, leave in place.

H. Portable Trench Shoe Shield (Shoe)
   1. A shield may be used with the following restrictions.
      a. Construct as required by State or Federal authority.
      b. Do not exceed trench limits.
      c. Do not disturb or alter pipe and bedding.

I. Rock Removal
   1. Remove and dispose of rock larger than 3 inches. Coordinate stockpile location with the Owner.

3.3 TRENCH BACKFILLING AND COMPACTION

A. Provide pipe foundation material below the bedding per Drawings.

B. Notify Engineer of poor soils below the pipe foundation and/or the pipe bedding.

C. Provide pipe embedment as required for the type of pipe installed per the appropriate Section.

D. Backfill the trench with excavated material in layers not exceeding 18 inches unless Structural Fill is specified.

E. Backfill Compaction
   1. Compact trenches using mechanical compaction methods.
   2. Compact backfill in layers not exceeding 18 inches to the following densities:

Material Type	Density Requirement
Native Material	Equal to adjacent undisturbed material
Structural Fill	Minimum of 95% of the Standard Proctor Density

F. Provide Structural Fill per Drawings.

G. Backfill trench at the end of each work day. Do not leave trench open overnight or weekends.

3.4 FIELD QUALITY CONTROL

1. Engineer will perform a minimum of one moisture/density test in accordance with ASTM D6938 (Nuclear Method) per 100 linear feet of trench.
2. Contractor shall recompact any defective backfill to meet the project requirements.

END OF SECTION

SECTION 31 25 00

EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Erosion bags.
2. Inlet protection
3. Silt fence.
4. Revetment stone.
5. Temporary vegetal cover.
6. Temporary erosion mats.
7. Wattles and sediment logs.
8. Hydraulic soil stabilizer.
9. Filter socks.

1.2 REFERENCES

A. Iowa Department of Transportation (IDOT) (Statewide Urban Design and Specifications [SUDAS] Section 9040)
1. Standard Specifications for Highway and Bridge Construction.
2. Erosion and Sediment Control Field Guide, April 2012

B. ASTM International (ASTM)
1. ASTM D1388 – Standard Test Method for Stiffness of Fabrics
2. ASTM D2487 – Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
3. ASTM D3776 – Standard Test Method for Mass Per Unit Area (Weight) of Fabric
4. ASTM D4355 – Standard Test Method for Deterioration of Geotextiles from Exposure to Light, Water and Heat in a Xenon Arc Type Apparatus
5. ASTM D4491 – Standard Test Method for Water Permeability of Geotextiles by Permittivity
6. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
7. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile
8. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
9. ASTM D5035 – Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)
10. ASTM D5199 – Standard Test Method for Measuring the Nominal Thickness of Geosynthetics

11. ASTM D5261 – Standard Test Method for Measuring Mass Per Unit Area of Geotextiles
12. ASTM D5338 – Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials Under Controlled Composting Conditions
13. ASTM D6525 – Standard Test Method for Measuring Nominal Thickness of Permanent Rolled Erosion Control Products

C. Iowa Department of Natural Resources (IDNR)
1. Iowa Stormwater Management Manual (2009)
2. Iowa Construction Site Erosion Control Manual (2006)

1.3 SYSTEM DESCRIPTION

A. Design Requirements
1. Select and design method for erosion and sediment control in accordance with local erosion control ordinances. Follow the guidelines in the Iowa Stormwater Management Manual.

B. Provide erosion control shown on the Drawings, as a minimum.

C. Provide additional erosion and sediment control to prevent erosion, which may be caused due to selected construction methods.

1.4 SUBMITTALS

A. Manufacturer’s certification for manmade products.

PART 2 - PRODUCTS

2.1 EROSION BAGS

A. Sand Bags
1. Minimum unfilled size of 16 by 26 inches.
2. Completely filled with a granular soil (IDOT Gradation 32).

B. Rock Filled Filter Bags
1. Minimum unfilled size of 18 x 30 inches.
2. Construct bag of high density polyethylene.
3. Seal bag with a high density polyethylene draw string knitted directly into the bag opening in a rolled seam using minimum of 480 denier polyester sewing yarn.
4. Fill bag with well graded coarse aggregate (IDOT Gradation 21):

2.2 INLET PROTECTION

A. Provide proposed inlet protection as shown on drawings.

B. Use IDOT-approved materials. Revetment stone class E, or as directed by Engineer.

2.3 SILT FENCE

A. Silt fence shall conform to IDOT Standard Specifications for Highway and Bridge Construction, Series 2015. Table 4196.01-1.

2.4 REVETMENT STONE

A. Revetment Stone is normally used for permanent erosion control. However, should this method of erosion control be selected, or for construction of temporary ditch checks, provide as follows:
   1. Provide minimum thickness of 1.0 feet (300 millimeters [mm]) measured perpendicular to the base.
   2. Provide IDOT Class E revetment stone as a minimum.
   3. If severe erosion is anticipated, submit design to the Engineer.

2.5 TEMPORARY VEGETAL COVER

A. Temporary Seed Mixture Components shall be according to the most current IDOT Standard Specifications for Highway and Bridge Construction.
   1. Use Type 5 mix for rural temporary erosion.
   2. Use Type 4 mix for urban temporary erosion.
   3. Use Wetland mix for areas delineated on Drawings.
   4. Use native grass and flowers (wild flowers) in areas shown on Drawings.

B. Use conventional seeding methods
   1. Fertilize.
   2. Seed bed preparation.
   3. Seed application.
   4. Mulching.

2.6 TEMPORARY EROSION MATS

A. General
   1. Use IDOT IM 4169.10 for suppliers.
   2. Netting shall be applied to both sides.

B. Types
   1. Wood excelsior mat and coconut fiber mat
      a. Used for slopes 4:1 or flatter.
      b. Comply with IDOT Standard Specification, 4169.10 B.1 and B.2
      c. Not to be used in channels.
   2. Slope protection
      a. Used for slopes or in channels.
      b. Comply with IDOT Standard Specification 4169, C.1 and C.2.

3. Netting
    a. Comply with IDOT Standard Specification 4169.10 D.

C. Anchoring Devices
1. Anchoring and components for temporary erosion mats shall be stapled or pinned using wire staples, according to IDOT Standard Specification 4169.10 A.
2. Materials shall be environmentally safe for soil and groundwater.
3. Do not use petroleum-based plastics or composites.
4. Do not use materials that may present a hazard from splintering or spearing.

2.7 WATTLES AND SEDIMENT LOGS

A. Wattles and sediment logs consist of straw or wood excelsior enclosed in a polyester or plastic netting. Diameter shown on the plans (6-inch minimum).

B. Submit product manufacturer data to Engineer for approval prior to use.

C. Follow IDOT Standard Specification 4169.12 B.

2.8 HYDRAULIC SOIL STABILIZERS

A. Sticking Agent
1. Shall conform to IDOT Standard Specification, 4169.05.

B. Mulch
1. Shall conform to IDOT Standard Specification 4169.07.
2. Use straw, hydraulic, bonded fiber matrix or mechanically bonded fiber matrix.
3. Use straw mulch as a minimum.

C. Submit to Engineer product specifications for selected hydraulic soil stabilizer prior to permitting use on project.

2.9 FILTER SOCKS

A. Conform to IDOT Standard Specification 4169.12 C.

B. Submit to the Engineer for approval.

2.10 GEOTEXTILE FABRICS

A. In accordance with IDOT Standard Specification 4196.

PART 3 - EXECUTION

3.1 GENERAL

A. Keep disturbed areas to a minimum.

B. Stabilize and protect disturbed areas with temporary seed and mulch within 14 days of active disturbance of the soil surface when no further construction is occurring.

C. Place excavated trench material on the high side of the trench where appropriate.

D. Discharge trench water to filter barrier prior to release into a drainage way.

E. Install gravel mats at site vehicle entrance and site exit locations to prevent tracking of soil.

F. Collect tracked soil and clean from paved roads near the construction site the same day it occurs.

G. Sediment control measures shall be in place at the end of each working day.

H. Locate soil stockpiles no closer than 25 feet of a roadway, wetland, or drainage control channel and control by covering the pile with tarpaulins, temporary seed and mulch or other suitable means, if the pile is exposed for 14 days or more.

I. Protect storm inlets including inlets in paved roadways with suitable approved barriers.

J. When it is necessary to cross waterways, provide crossing structures for machinery.

K. Repair, replace, and maintain erosion and sedimentation structures until vegetation is re-established or permanent structures are installed.

L. Remove temporary erosion control structures and accumulated sediment and/or debris when vegetation is established.

3.2 EARTH STRUCTURES

A. Utilize one or more of the following:
1. Earth Structures
    a. Berms or embankments.
    b. Sedimentation basins and traps.
    c. Temporary diversion ditches.
    d. Temporary chutes and ditches.
    e. Grade control structures.

2. Construct earthen structures using standard net weights and techniques including fine grading and compaction.

3.3 EROSION AND SEDIMENTATION CONTROL DEVICES

A. Erosion Bags
1. Place type (sand or rock filled) where shown on the Drawings at a minimum.
2. Place bags end to end across surface water flow path.
3. Place bags at right angles to the direction of water flow.
4. Excavate shallow sump on the upstream side of bags.
5. Entrench bags at least 4 inches into the ground.
6. Place bags prior to disturbing upslope areas.
7. Drive support posts a minimum of 12 inches into the subgrade and extend to the top of the bags.
8. Remove from the site after final stabilization.

B. Inlet Protection
1. Provide inlet protection in accordance with the Iowa Construction Site Erosion Control Manual, Section 3.9.
2. Provide submittal to Engineer for selected inlet protection.

C. Silt Fences
1. Place geotextile (silt) fence prior to disturbing upslope areas.
2. Excavate trench approximately 4 inches by 4 inches along perimeter of area to be fenced.
3. Secure and continuously anchor bottom of geotextile (silt) fence with excavated material in trench bottom.
4. Install support post on downstream side of the geotextile to a depth adequate to stabilize geotextile fence (12-inch minimum depth).
5. Secure geotextile to posts.
   a. Staples: 0.5-inch deep.
   b. Staple to up slope side of post.
6. Backfill over geotextile in trench and compact.
7. Maximum spacing of the posts shall not exceed 10 linear feet.

D. Revetment stone
1. Place revetment stone by mechanical methods and as required in IDOT Standard Specification 2507.03 B
2. Place revetment stone upon appropriate geotextile fabric as required by IDOT Standard Specification 4196.01 B.3.

E. Temporary Vegetal Cover
1. Use conventional seeding methods unless otherwise directed by Engineer.
2. Comply with IDOT Standard Specifications 2601.03 C.

F. Temporary Erosion Mats
1. Installation:
   a. See plan details for anchor trench (at ends, checks and edges) installation procedures.
      1) Anchor trenches shall be 12 inches deep.
      2) Compact anchor trench backfill.
      3) Place staples in end and check trenches spaced at 12 inches.
   b. Follow manufacturer's specifications and instructions for placement unless project documents are more stringent.
   c. Roll width overlaps shall be 12 inches at edges. Pin or staple every 3 feet along overlap length.
   d. Roll end overlaps may be spliced by overlapping (in the direction of water flow) 2 feet with the upstream portion of the mat on top of the downstream portion. This overlap shall receive at least three pins or staples with a maximum spacing of 12 inches.
   e. Pins or staples shall be 18 inches in length minimum, driven flush with the mat.
   f. Place mat flat conforming to contours in soil surface. Do not stretch mat.
   g. Place mat from toe of slope toward top of slope.
   h. Mat can be placed from downstream toward upstream or from upstream toward downstream.
2. Site Preparation.
   a. Place seed and fertilizer prior to placing permanent erosion control blanket.
   b. Seed and fertilizer may be placed after permanent erosion mat installation with Engineer's approval.
   c. Ground surface shall be smooth and compact.
   d. Remove all rocks, dirt clods, stumps, roots, grass clumps, trash and other obstructions from lying in direct contact with the soil surface and the erosion mat.

G. Wattles and Sediment Logs
1. Installation:
   a. Place wattle or log on top of an erosion control blanket.
   b. Place one every 1% of grade, evenly spaced at an interval of 50 feet.

H. Hydraulic Soil Stabilizers
1. Installation:
   a. Install soil stabilizers using conventional hydraulic seeding equipment.
   b. Follow manufacturer’s recommendations for application rates.
   c. Do not use asphalt based products as soil stabilizers.
   d. Do not place soil stabilizers in channels.

I. Filter Socks
1. Installation:
   a. Filter socks shall be capable of maintaining location and form during and after rainfall events.

b. Filter socks shall be placed at locations shown on the Drawings.
c. Place filter socks generally perpendicular to the flow line of the ditch and extend far enough so the ground level on the ends of the filter socks are a minimum 18 inches higher than the flow line.

3.4 MAINTENANCE

A. Inspect silt fences and filter barriers immediately after each rainfall and at least daily during prolonged rainfall.
   1. Make any required repairs immediately.
   2. Maintain temporary erosion and sedimentation control structures until permanent soil erosion controls are completed and/or vegetation is established.
      a. Repair damaged structures.
      b. Replace lost structures.
      c. Remove sediment from deposition areas adjacent to erosion control structures without damaging structures on a regular basis.
      d. Refill eroded areas as required for grade stabilization.

B. If the fabric on a silt fence or filter barrier decomposes or becomes ineffective prior to the end of the expected usable life and the barrier is still necessary, replace the fabric promptly.

C. Remove sediment deposits after each major storm event and when deposits reach approximately half the height of the barrier.

D. Remove any sediment deposits remaining in place after the silt fence or filter barrier is no longer required and dress to conform to the existing grade, prepared and seeded.

E. Repair/restore any washed-out areas.

F. Maintenance period to be entire project period including the one-year warranty.

G. Owner may direct Contractor to remove the temporary erosion control measures any time during the one-year correction period.

H. Construct permanent erosion control measures immediately after earthwork is completed.

END OF SECTION

SECTION 31 32 19

GEOTEXTILES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Geotextile fabrics under riprap.
2. Geotextile fabrics for separation, cushioning, and subgrade reinforcement.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM D123 – Standard Terminology Relating to Textiles.
2. ASTM D4354 – Standard Practice for Sampling Geotextiles for Testing.
3. ASTM D4355 – Standard Test Method for Determination of Geotextiles from Exposure to Ultraviolet Light and Water (Xeron-Arc Type Apparatus).
4. ASTM D4491 – Standard Test Method for Water Permeability of Geotextiles by Permittivity.
5. ASTM D4533 – Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
6. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
7. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of Geotextiles.
8. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products.
9. ASTM D4873 – Standard Guide for Identification, Storage and Handling of Geosynthetic Rolls.
10. ASTM D4884 – Standard Test Method of Strength of Sewn or Thermally Bonded Seams of Geotextiles.

B. Geosynthetics Research Institute (GRI)
1. GT12(a) – Test Methods and Properties for Nonwoven Geotextiles Used as Protection (or cushioning) Materials – ASTM Version.
2. GT13 – Test Methods and Properties for Geotextiles Used as Separation between Subgrade Soils and Aggregate.

C. Iowa Department of Transportation Standard Specifications, most recent version.

1.3 SUBMITTALS

A. Provide, prior to delivery of the geotextile fabric, a manufacturer's Certificate of Compliance that the geotextile fabric meets the requirements of this Section.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver only geotextiles meeting the specifications of the Site.

B. All geotextiles shall be labeled, shipped, stored and handled in accordance with ASTM D4873.

C. Do not use hooks, tongs, or other sharp instruments for handling geotextile.

D. Store geotextile fabric in a dry location until installed.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide geotextile fabric consisting of either woven or non-woven polyester, polypropylene, stabilized nylon, polyethylene or polyvinylidene chloride.
   1. All fabric shall have the minimum strength values in the weakest principle direction.
   2. Non-woven fabric may be needle punched, heat-bonded, resin-bonded, or combinations thereof.

B. The geotextile fabric shall be insect, rodent, mildew, and rot resistant.

C. Clearly mark the geotextile fabric rolls showing the type of fabric.

D. If sewn seams are used, provide a field sewn seam sample produced from the geotextile fabric and thread and with the equipment to be used on the project, prior to its incorporation into the work.

2.2 MATERIALS

A. Geotextile Fabric – Used Under Riprap
   1. The fabric shall comply with the specifications in Iowa DOT Section 4196, Table 4196.01-3 Fabric for Use as Embankment Erosion Control.

B. Woven Geotextile Fabric Subgrade Reinforcement
   1. Woven geotextile fabric subgrade reinforcement shall be used beneath roadway subbase.

2. The fabric shall comply with the following minimum physical requirements:

Parameter	Method	Value[1]
Trapezoid Tear (lb)	ASTM D4533	120 lbs
Apparent Opening Size (sieve size)	ASTM D4751	30-70
Ultraviolet Degradation (% strength retained)	ASTM D4355	70
Grab Tensile Strength (lb)	ASTM D4632-86	315 min.
CBR Puncture Strength (lb)	ASTM D6241	900 min.
Elongation at Required Strength (%)	ASTM D4632-86	15% max.

Note:
[1] All numerical values represent minimum/maximum average roll values (i.e., the average of test results on any roll in a lot should meet or exceed the minimum values in the table).
CBR = California Bearing Ratio

C. Nonwoven Geotextile Fabrics – Used for Underdrain or Leachate Collection Systems
1. The geotextile fabric shall comply with the physical properties in Table 1.

Table 1 – Geotextile Properties

Property(1)	Test Method ASTM	Unit	16 oz/yd^2	10 oz/yd^2
Mass per unit area	D5261	oz/yd^2	16	10
Grab tensile strength	D4632	lb	425	270
Grab tensile elongation	D4632	%	50	50
Trap. Tear strength	D4533	lb	150	100
Permittivity	D4491	sec^{-1}	0.57	0.94
Permeability	D4491	cm/sec	0.25	0.30
Puncture (pin) strength	D6241	lb	1200	725
UV resistance(2)	D4355	%	70	70

Notes:
(1)All values are MARV except UV resistance; it is a minimum value.
(2) Evaluation to be on 2.0 inch strip tensile specimens after 500 hours exposure.
MARV – minimum average roll value
oz/yd^2 – ounce per square yard
UV - ultraviolet

PART 3 - EXECUTION

3.1 SEAMS WITHIN UNDERDRAIN AND LEACHATE COLLECTION SYSTEMS

A. Sew the seams of the geotextile with thread having the same or greater physical properties as the material. Thread shall have similar or better resistance to chemical attack and UV degradation as the geotextile material.

B. Test seams in accordance with ASTM D4884.

C. Seams shall develop a tensile strength equal to or greater than 90% of the required grab tensile strength of the fabric, unless otherwise specified.

D. Seam shall be a prayer type. Provide a minimum of one test result from a trial seam performed at Site.

E. Repair any geomembrane damaged during installation of geotextile.

3.2 SEAMS FOR UNDER RIPRAP OR ROADS

A. Grade the area smooth and remove all stones, roots, sticks, or other foreign material which would interfere with the fabric being completely in contact with the soil.

B. Place the fabric loosely and parallel to the direction of water movement.
1. Provide pinning or stapling to hold the geotextile in place.
2. Join separate pieces of fabric by overlapping or sewing according to Table 2.

Table 2 – Maximum Spacing for Securing Pins

Slope	Spacing (feet)
Steeper than 3H to 1V	2
From 3H to 1V to 4H to 1V	3
Flatter than 4H to 1V	5

3. Place the fabric in the overlapped joints with a minimum overlap of 24 inches in the direction of flow.

C. After placement, do not expose the fabric longer than 48 hours prior to covering.

D. Cover damaged areas with a patch of fabric using a 3-foot overlap in all directions.

E. Place riprap from the base of the slope upward.

F. Do not allow freefall of riprap to prevent damage to the fabric.

3.3 PROTECTION

A. Protect the geotextile at all times during construction from contamination by surface runoff. Remove and replace any geotextile so contaminated with uncontaminated geotextile.

B. Replace any damaged geotextile.

C. Schedule the work so that the covering of the geotextile with a layer of the specified material is completed within 20 calendar days after placement of the geotextile.

D. Protect the geotextile from damage prior to and during the placement of riprap or other materials.
   1. Limit the height of drop to less than 300 millimeters (mm) (1 foot), or place a cushioning layer of sand or gravel on top of the geotextile before placing the material, or other methods deemed necessary.
   2. Take care to ensure that the utilized cushioning materials do not impede the flow of water.
   3. Before placement of riprap or other materials, demonstrate that the proposed placement technique will not cause damage to the geotextile.

END OF SECTION

SECTION 31 35 26

CLAY LINER CONSTRUCTION - LANDFILL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work in this section specifies the construction of the sanitary landfill clay liner.

B. Contractor shall under this specification excavate, haul, place, and compact all clay soils used in construction of the landfill liner system.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED BY CONTRACTOR

A. Owner will furnish borrow site where Contractor can obtain clay liner material.

B. An on-site clay source has been identified. On-site clay source must be tested in accordance with this Section and Section 01 45 00, Quality Control. The Contractor is responsible for installing qualified clay that meets the minimum project requirements.

1.3 RELATED SECTIONS

A. Section 31 22 00, Grading

B. Section 31 05 10, Soils and Aggregates for Earthwork

1.4 REFERENCE STANDARDS

A. ASTM International (ASTM)
1. ASTM D698 – Test for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb. (2.49-kg) Rammer and 12-in. (305-mm) Drop (Standard Proctor).
2. ASTM D1140 – Standard Test Method for Amount of Material in Soils Finer than the No. 200 (75 um) Sieve.
3. ASTM D1557 – Test for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, using 10-lb. (4.5-kg) Rammer and 18-in. (457-mm) Drop (Modified Proctor)
4. ASTM D1587 – Standard Practice for Thin-Walled Tube Sampling of Soils
5. ASTM D2216 – Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures
6. ASTM D2434 – Standard Test Method for Permeability of Granular Soils (Constant Head)
7. ASTM D2487 – Standard Classification of Soils for Engineering Purposes.
8. ASTM D2488 – Standard Practice for Description and Identification of Soils (visual-manual procedure)
9. ASTM D4318 – Liquid Limit, Plastic Limit, and Plasticity Index of Soils

10. ASTM D5084 – Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
11. ASTM D6938 – Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
12. ASTM D7928 – Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis

1.5 TESTING RESPONSIBILITY

A. Owner's representative shall perform on-site moisture density testing of compacted clay liner.

B. The Contractor shall provide the following:
1. Access for testing, inspection, and documentation.
2. Machinery required to grade density testing locations.
3. Replace and recompact clay material removed for testing purposes:
   a. Backfill Shelby tube holes in liner with powdered bentonite-voclay-premium gel or equal and hydrate.

1.6 TESTING REQUIREMENTS

A. Source Testing
1. Standard Proctor: ASTM D698 (minimum 3 tests or 1/5,000 cubic yards [cy])
2. Grain Size and Hydrometer Analysis: ASTM D7928 (minimum 3 tests or 1/5,000 cy)
3. Atterberg Limits: ASTM D4318 (minimum 3 tests or 1/5,000 cy)
4. Hydraulic Conductivity: ASTM D5084 (3 per compaction test)
5. Soil Classification ASTM D2487 (minimum 3 tests or 1/5,000 cy)

B. Installation Testing
1. Density testing will be performed on a 50-foot grid pattern for each 6- to 8-inch lift on a 50-foot horizontal offset and every 50 linear feet in liner anchor trenches in accordance with ASTM D6938. Density and moisture must meet the compaction requirements to achieve the necessary permeability specified in the geotechnical laboratory analysis (Compaction Curve) and are equal to or greater than 95% of the Standard Proctor (ASTM D698) maximum dry density and moisture content as determined by Owner's Representative.
2. One Shelby tube sample per 12 inches of thickness per acre of liner placement shall be retrieved and analyzed for the following:
   a. Grain Size and Hydrometer Analysis: ASTM D422 – no less than 50% by weight passing the #200 sieve.
   b. Moisture Content: ASTM D2216 - to be determined.
   c. Dry Density: ASTM D698 – must achieve 95% compaction.
   d. Atterberg Limits – ASTM D4318 - Liquid Limit (LL): 25% or greater; Plastic Index (PI): Average 12% or greater
   e. Hydraulic Conductivity: ASTM D5084 – maximum of 1×10^{-7} centimeters per second (cm/sec).

f. In-place moisture density test (ASTM D6938) shall be collected at each Shelby tube sampling location. Density and moisture must meet the compaction requirements to achieve the necessary permeability specified in the geotechnical laboratory analysis and can be no less than 95% of the Standard Proctor (ASTM D698) maximum density and moisture content to be specified.
g. All test holes shall be filled with bentonite and hydrated by the Contractor.

3. Failing Samples
   a. If any sample fails to meet project requirements (i.e., maximum permeability of 1 x 10^{-7} cm/sec), a minimum of two adjacent previously untested samples shall be analyzed. Adjacent samples shall be taken 50 feet from the original sample location.
   b. If the additional samples fail, the liner shall be removed and replaced or scarified and recompacted, as directed by the Owner's representative, at the Contractor's expense.
   c. The cost for the additional sampling, testing, and engineering review shall be paid by the Contractor.

PART 2 - PRODUCTS

2.1 CLAY LINER MATERIAL

A. Source
   1. A source of clay liner material located on-site.
   2. The in-place soils have historically been suitable for liner material. The Contractor will perform source testing in accordance with this Section and Section 01 45 00, Quality Control, to verify compaction requirements. Contractor will excavate the material and re-compact.

B. An alternate clay borrow source will not be approved by the Owner or Engineer.

PART 3 - EXECUTION

3.1 CLAY EXCAVATING, LOADING AND HAULING

A. Strip and stockpile topsoil.

B. Contractor is responsible for excavating and loading clay at the borrow site.

C. Contractor is responsible for hauling only clay which meets the requirements for clay liner material to the project area.

3.2 SUBGRADE PREPARATION

A. Soil materials used for liner support material or for berm construction shall be placed and compacted to 90% Standard Proctor.

B. Subgrade shall be graded to the tolerance stated in Section 01 45 00, Quality Control. Subgrade shall be unyielding (no yielding greater than 2 inches). Proof roll subgrade prior to clay placement.

3.3 CLAY LINER PLACEMENT

A. General
1. Clay liner placement shall not proceed until liner subgrade, grading, testing, and documentation has been completed.
2. Place clay materials so that lift thickness after compaction is not greater than 6 inches.
3. The Contractor shall immediately proceed with the construction of the subsequent clay liner lift after the completion of quality control testing and construction documentation work (field testing and surveying) of the previous lift.
4. Each lift to be kneaded with the previously placed lift.
5. The top surface of the clay liner shall be made smooth by proof rolling after completing compaction of the final lift of clay.
6. Maximum clod size is 3 inches.

B. Landfill Base
1. Place clay in a continuous lift across the entire landfill bottom.
2. Clay liner for landfill base shall consist of 6-inch compacted lifts placed to a minimum thickness of 2 feet measured perpendicular to the liner surface. Tolerance of 0.0 to +0.1 feet.

C. Landfill Sidewall
1. Construct clay liner for landfill sidewall after completion of construction and testing of liner base.
2. Clay liner for landfill sidewall shall consist of 6-inch compacted lifts placed to a minimum thickness of 2 feet measured perpendicular to the liner surface. Tolerance of 0.0 to +0.1 feet

D. Moisture Content Adjustment
1. Provide all equipment necessary to adjust clay to the proper moisture content for compaction.
2. Clay liner shall not be placed at a moisture content less than +2% of optimum as determined by ASTM D698.
3. Excessively dry or wet clay material shall be replaced prior to placement of additional lifts.

E. Compaction
1. Provide a sheepsfoot roller for clay liner compaction except in confined areas.
2. Compact clay to meet the compaction requirements specified in the geotechnical laboratory analysis (Daniels Curve) to achieve the required permeability. At a minimum clay must be compacted to 95% of the Standard Proctor maximum density with a moisture content between 2% and 4% above optimum.

3. Upon completion of each 6-inch compacted lift, Contractor shall provide the following:
   a. Machinery required to blade clay liner at density test locations.
   b. Machinery required to obtain undisturbed samples (i.e., Shelby tubes).
   c. Access to clay liner for checking grades after the completion of each lift.

F. The maximum permeability of clay samples collected and tested under Paragraph 1.6 of this section shall be 1×10^{-7} cm/sec.

3.4 CONTRACTOR'S RESPONSIBILITY

A. Maintain the integrity of the clay liner until final payment and acceptance.
   1. Clay integrity shall include clay moisture content, density, and hydraulic conductivity.

3.5 RESPONSIBILITY FOR CLAY LINER NOT MEETING SPECIFICATION REQUIREMENTS

A. The Owner's representative shall provide the Contractor with a copy of all clay liner quality control results as soon as they are available.

B. If the in-place clay liner fails to meet the requirements of this section, the Contractor shall be responsible as follows:
   1. Remove and replace or rework any portion of the clay liner not meeting the project specifications until project specifications are met.
   2. The Contractor shall not be compensated for removing, replacing, or reworking clay not meeting the specification requirements.

END OF SECTION

SECTION 31 35 27

HDPE GEOMEMBRANE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Smooth High-Density Polyethylene (HDPE) flexible membrane.
2. Textured HDPE flexible membrane.
3. Subgrade preparation.
4. Membrane installation.
5. Quality assurance and control measures.

1.2 REFERENCES

A. ASTM International (ASTM)
1. ASTM D638 – Test Method for Tensile Properties of Plastics
2. ASTM D746 – Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
3. ASTM D1004 – Test Method for Initial Tear Resistance of Plastic Film and Sheeting
4. ASTM D1238-95 – Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
5. ASTM D1505 – Test Method for Density of Plastics by the Density-Gradient Technique
6. ASTM D1603 – Test Method for Carbon Black in Olefin Plastics
7. ASTM 4437 – Practice for Determining the Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembranes
8. ASTM D4833-96 – Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
9. ASTM D5199-95 – Test Method for Measuring Nominal Thickness of Geotextile and Geomembranes
10. ASTM D5321-92 – Test Methods for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic set Geosynthetic Friction by the Direct Shear Method
11. ASTM D5397-95 – Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes using Notched Constant Tension Load Test
12. ASTM D5885-97 – Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High-Pressure Differential Scanning Calorimetry
13. ASTM D5596-94 – Test Methods of Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
14. ASTM D5994-96 – Test Method for Measuring the Core Thickness of Textured Geomembranes

B. Geosynthetic Research Institute (GRI):
   1. GRI GM12 – Asperity Measurement of Textured Geomembranes Using a Depth Gage
   2. GRI GM13 – Test Properties, Testing Frequency and Recommended Warranty for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes
   3. GRI GM19 – Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes

1.3 SUBMITTALS

A. Product Data Submittals
   1. Data which shows HDPE geomembrane material properties.
   2. Specifications for resin and polymer.

B. Shop Drawing Submittals
   1. Product data including specifications for resin and polymer.
   2. Panel layout diagram.
   3. Installation procedures.
   4. Liner anchor details.
   5. Liner penetration details.
   6. Liner repair procedures.

C. Quality Assurance/Quality Control (QA/QC) Submittals
   1. Test Reports, Certificates Submittals:
      a. Certification that liner material conforms to specifications.
      b. Field quality control test reports of required tests. Provide as soon as results become available.
      c. Manufacturing quality control data (see note on Table 1) provided for each roll of geomembrane.
      d. Membrane installer's written certification that the base subgrade is suitable and acceptable for installation of the liner material.
   2. Qualification Statements:
      a. Qualification information on manufacturer/fabricator.
      b. Qualification information on installer.

D. Samples
   1. Liner material.
   2. Welded seams, shop and field.

E. Closeout Submittals
   1. Written warranty by the manufacturer/fabricator and installer.
   2. As-built panel layout drawing in Autocad format within 10 calendar days of completion of installation.

1.4 QUALITY ASSURANCE

A. Qualifications

1. Installer Information:
   a. Corporate background.
   b. Capabilities including:
      1) Size.
      2) Equipment.
      3) Personnel.
      4) Anticipated daily production.
   c. List of 10 (minimum) completed facilities totaling a minimum of 2,000,000 square feet:
      1) Name, location, and purpose of facility.
      2) Date of installation.
      3) Name of Owner and project manager.
      4) Description and surface area of liner and name of liner manufacturer.
      5) Types of seams and seaming equipment used.
   d. Assigned to this project will be a master seamer who has experience seaming a minimum of 1,000,000 square feet of liner using the same type of equipment and material intended for this project.
   e. Qualifications of personnel performing seaming operations.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Transporter shall be aware of the consequences of damage to liner and familiar with manufacturer's handling requirements.

B. Prepare and package materials to prevent damage or deterioration such as excessive aging or puncturing during shipment.

C. Identify the material thickness, length, width, and manufacturer's mark on packaging.

D. Protect material such that it is dry upon arrival at the Site (i.e., free of water, snow, etc.).

E. Provide open packaging cores such that a 4-inch diameter metal rod can be inserted for deployment.

F. Store and protect liner material from vandalism, vehicular traffic, and damage from construction activities. Do not store more than two rolls high.

1.6 WARRANTY

A. Provide a written warranty by the manufacturer/fabricator and installer in the Owner's name guaranteeing the quality of the material and workmanship. (Five years for the material and one year for the installation.)

B. All damage to the liner, except those expressly due to operation of equipment, shall be covered by the warranty.

PART 2 - PRODUCTS

2.1 ACCEPTABLE HDPE MANUFACTURERS

A. Agru America

B. Poly-Flex, Inc.

C. Solmax

D. An Engineer-approved equal

2.2 HDPE FLEXIBLE MEMBRANE MATERIAL

A. Provide a high density polyethylene liner meeting the minimum requirements stated in the following Table 1:

Table 1 – HDPE Geomembrane Material Properties

Property	Test Method	Units	60 mil Smooth HDPE Required Value	60 mil Textured HDPE Required Value
A. Sheet Properties				
1. Thickness (min. avg.)	ASTM D5199/ASTM D5994	Mil	60	60
a. Lowest Ind. for 8 Out of 10 Values		Mil	60	60
b. Lowest Ind. for Any of 10 Values		Mil	60	60
3. Asperity Height (min. avg.)	ASTM D7466	Mil	Not Applicable	10
4. Tensile Properties (min. avg. in each direction)	ASTM D6693			
a. Yield Strength		lb/in.	126 min.	126 min.
b. Break Strength		lb/in.	228 min.	90 min.
c. Elongation at Yield		%	12 min.	12 min.
d. Elongation at Break		%	700 min.	100 min.
5. Tear Resistance	ASTM D1004	lb	42 min.	42 min.
6. Puncture Resistance	ASTM D4833	lb	108 min.	90 min.
7. Carbon Black Content	ASTM D1603	% Range	2 to 3%	2 to 3%
8. Carbon Black Dispersion	ASTM D5596	Rating		
8 out of 10			category 1 or 2	category1 or 2
All 10			category 1,2 or 3	category 1, 2 or 3
B. Resin Properties				
1. Melt Flow Index	ASTM D1238	g/10 min.	<1.0 max.	<1.0 max.
2. Resin Density	ASTM D1505	g/cm^3	0.932 min.	0.932 min.
C. Seam Properties[1]				
1. Peel Strength (fusion)	GRI GM19	lb/in.	91 min.	91 min.
2. Peel Strength (extrusion)	GRI GM19	lb/in.	78 min.	78 min.
3. Shear Strength	GRI GM19	lb/in.	120 min.	120 min.
D. Environmental Properties				
1. Stress Cracking	ASTM D5397	hrs.	300	300
2. U.V. Resistance, high pressure OIT (Min. Avg.)	ASTM D5885	% retained after 1600 hrs	50	50
E. Friction Resistance[2]				
1. Interface Between Geomembrane and Underlying Material	ASTM D5321		Not Required	22º min. (residual)
2. Interface Between Geomembrane and Overlying Material	ASTM D5321		Not Required	22º min. (residual)

Notes:
General note: Manufacturer shall provide MQC test results of materials in accordance with the frequencies listed in the GRI GM-13 specifications.
[1] Refer to GRI GM19 for seam "locus of break" requirements. Four out of five seams must meet strength values. The fifth seam can be 80% of the strength values.
[2] Tests to be done under saturated/wet conditions; a minimum of three samples shall be tested for each of the interfaces.

B. Provide HDPE liner meeting the minimum requirements stated in Table 1.
C. White or black liner is acceptable.
D. General HDPE Material Requirements
   1. Contain no additive which will leach out or cause deterioration over time.

2. Be free of holes, blisters, undispersed raw materials and any sign of contamination by foreign matter.
3. Provide labels on rolls identifying thickness, length, width and manufacturer's mark number.

2.3 WELDING PRODUCTS

A. Manufacture field welding material from the same materials used in the manufacture of the membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that the clay liner has been tested and approved by the Engineer prior to subgrade preparation.

B. Inspect site and remove the following:
1. Angular rocks, roots, grass and vegetation.
2. Foreign materials and protrusions.

C. After surface preparation is completed, the liner installer shall inspect the site and provide a written certification that the base subgrade is suitable and acceptable for installation of the liner material.

3.2 SURFACE PREPARATION

A. Prior to liner installation, prepare surface by grading, recompacting and proof rolling.

B. Grade site such that there are no abrupt changes or breaks in grade.

C. Compact subgrade to provide a firm unyielding base for liner installation.

D. Roll subgrade surface smooth with a drum roller such that base is unyielding.

E. Remove from subgrade surface all loose earth, rocks, rubble and other foreign material.

F. Correct any defects in subgrade identified by the membrane installer.

3.3 MEMBRANE INSTALLATION

A. Climatic Conditions
1. Temperature: Install membrane during temperature range of 5 degrees Celsius (°C) to 40°C.

2. Wind: Do not attempt installation when wind velocity and/or dusty conditions interfere with membrane placement, alignment of seams, or cleanliness of seam area.
3. Precipitation: Do not attempt installation when precipitation interferes with having a dry seaming surface (i.e., rain, sleet, snow, or heavy dew).

B. Layout
1. Overlap a minimum of 3 inches for extrusion and 4 inches for fusion welding.
2. Prepare areas for welding in accordance with the manufacturer's/installer's requirements, including cleaning.
3. Place temporary anchoring such as sand bags on 2-foot centers on membrane immediately after layout.
4. Provide sufficient personnel to properly place the membrane and to operate the equipment so that the project proceeds in a workmanlike manner to completion.
5. All panels shall be placed perpendicular to slopes greater than 10%.
6. Longitudinal seams shall not be located within the leachate collection trenches.
7. In no cases will equipment travel be allowed over unprotected geotextile/geomembrane. If equipment is used to deploy geomembrane over clay surface, it shall not cause rutting (greater than 1 inch) in the clay surface.

C. Welding
1. Weld together by extrusion welding or by hot wedge (fusion) welding.
2. Welding equipment shall be capable of continuously monitoring and controlling the temperature in the zone of contact or on the extrusion welder.
3. Seams parallel to the toe of the slopes shall be located a minimum of 10 to 15 feet from the toe without prior engineers approval, but in no case less than 5 feet.
4. Mark any burnouts or defects found along seam while welding.
5. Sufficient number of hot shoe and extrusion welders shall be on-site at all times such that the progress of work is not hampered due to the lack of equipment or personnel.
6. Field welding shall result in a homogeneous bond which is durable, strong, and airtight.

D. Repair
1. Repair and patch all areas of membrane which show injury, scuffing, puncture, or distress.
2. Repair and patch all defective welds.
3. Complete repairing and patching in accordance with the manufacturer's recommendations.
4. All repairs are to be completed within 24 hours of initial discovery.

E. Anchoring
1. Excavation of anchor trench is the responsibility of the membrane installer.
2. Anchor in accordance with the anchoring details shown on the drawings.
   a. Excavate the trench only for such lengths as will be used for anchoring on any particular day.
   b. Use temporary anchor until the panels are welded and are ready for anchoring.

3. Backfill anchor trenches the same day the membrane welding has been tested and approved.
4. Backfill anchor trench with excavated soil and compact to 95% standard Proctor Maximum Dry Density (ASTM D698).

F. Membrane Penetrations
1. Attach membrane to objects penetrating the liner in accordance with the details shown on the drawings.
2. Provide fabricated boots for pipes where applicable. Install boots in accordance with manufacturer's recommendations.

3.4 FIELD QUALITY CONTROL

A. Owner's Installation Observation
1. The Owner will provide an experienced and qualified QC observation team during the membrane installation to observe and record installation procedures and quality control procedures and results.
2. Provide information and assistance to the Owner's QC observation team as required to observe and verify the following.
   a. Membrane packaging identification slips.
   b. Subgrade conditions prior to liner installation.
   c. Handling of membrane package or roll.
   d. Unrolling and deployment of each membrane panel.
   e. Temporary and permanent anchoring of membrane.
   f. Confirm that required overlap distances are met.
   g. Preparation and cleaning of membrane prior to seaming.
   h. Seaming products for membrane for proper products, equipment, and techniques and observation of trial seams.
   i. Visual observation of the membrane to ensure it is free from pores, pinholes, and other detrimental defects.
   j. Visual observation of fusion welds. Mark all breaks or holes for repairs.
   k. Observation of non-destructive tests on seams.
   l. Observation of sampling of destructive test samples.

B. General - Site Tests, Inspections
1. Provide membrane samples required for the required quality control testing.
2. Provide testing and measurement equipment.
3. Tests shall be performed in the presence of the QC observer.
   a. The QC observer will record the date and time, ambient temperature, location and seam number, pass or fail description, reason for taking sample and attached to each sample.

C. Trial Seams
1. Conduct trial seams at the beginning of each seaming period and a minimum of once every 4 hours for each seaming apparatus used.
2. Make trial seams at locations selected by Owner's representative near the area of the seaming and in contact with the subgrade.

3. Trial seam samples shall be 10 feet long for hot shoe welding and 3 feet long for extrusion welding with the seam centered lengthwise.
4. Cut five specimens 1 inch wide from each opposite end of the trial seam and test for shear and peel (both sides of seams) with a tensiometer.
5. If trial seam fails test, the seaming apparatus cannot be used until deficiencies are corrected and two consecutive successful tests are achieved.

D. Non-Destructive Seam Testing
1. Provide non-destructive seam testing over the full length of the seam.
2. Test single wedge fusion seams and extrusion seams with a vacuum testing box apparatus.
   a. Apparatus includes:
      1) Rigid housing with viewing window, soft rubber gasket attached to bottom, valve assembly, and vacuum gauge.
      2) Vacuum tank and pump with pressure controller and fittings.
   b. Provide vacuum test as follows:
      1) Trim excess sheet overlap.
      2) Clean window and gasket surface, and inspect gasket for damage if any.
      3) Energize the vacuum pump and reduce tank pressure to 5 pounds per square inch (psi).
      4) Wet seam test area with soapy solution.
      5) Press down box over wetted area.
      6) Close bleed valve and open vacuum valve to create a vacuum inside the box.
      7) Maintain the vacuum for a period of 15 seconds and examine seam through window for presence of soap bubbles.
      8) If no bubbles appear after 15 seconds, stop test and move to adjoining area overlapping each test area a minimum of 3 inches and repeat process.
      9) Repair all areas where soap bubbles appear and retest.
3. Test double fusion seams with a channel in between using air pressure testing equipment.
   a. Equipment includes:
      1) Air pump equipped with pressure gauge.
      2) Manometer with air feeding device.
   b. Proceed with air pressure testing as follows:
      1) Seal both ends of the seam to be tested.
      2) Attach air feed device to one end of the channel.
      3) Pressurize the test channel to 30 psi and maintain.
      4) Test for a period of 5 minutes. If there is a pressure loss which exceeds 4 psi or venting the channel at the other end does not release the pressure at the air feed device, subdivide the seam and retest to locate blocks, leaks, etc.
      5) Repair and retest until the full length of seam passes.

E. Destructive Seam Testing
1. Take destructive test samples at locations designated by the Owner's representative.

2. The locations will generally average one for every 500 feet of the total seaming length for the installation.
3. The following will be considered by the Owner's representative in selecting the sample locations.
    a. Areas identified as suspect during non-destructive testing/observation.
    b. A minimum of two samples for each seamer.
    c. A minimum of two samples for each seaming condition.
    d. A minimum of two samples for each representative working condition (i.e., weather conditions).
    e. Seams that may appear suspect to the observer.
4. Cut samples as seaming progresses and immediately repair holes resulting from sampling and vacuum test the seams.
5. At each sampling location, take two 1-inch test strips for field testing.
    a. Cut each strip 1 inch wide with the seam centered parallel to the width.
    b. The distance between these two strips shall be 48 inches.
6. Test the two 1-inch-wide strips in the field using a tensiometer for peel adhesion.
    a. The tensiometer shall be capable of maintaining a constant jaw separation rate of 2 inches per minute.
    b. If the test fails, repair the seam.
    c. Owner's representative will be the final judge regarding seam acceptability, based on the failure criteria.
7. For seams to be considered acceptable, four out of five strips per sample shall pass field for tensile properties and five out of five shall pass for peel separation.
8. One coupon shall be cut from the beginning or end of each seam greater than 100 feet and tested for peel and shear using the field tensiometer.

F. Procedure for Failed Destructive Tests
1. Repair failed seam by either isolating the length of the failed seam by cutting additional destructive test samples a minimum of 10 feet on both sides of failed destructive test or repair the entire seam.
2. Repair failed seam or portion with one of the following methods:
    a. Cut out failed seam or portion, reposition panel, and re-seam.
    b. Install a cap strip.
3. Test repaired seams by destructive test method if repair length exceeds 100 feet.
4. Repaired seams shall be bounded by passing destructive tests.

G. Defects and Repairs of Non-Seam Areas
1. Provide a visual inspection of the geomembrane and repair the following defects:
    a. Holes.
    b. Blisters.
    c. Liner with undispersed raw material.
    d. Contaminated liner material.
2. Keep liner clean for during inspection and repair.
3. Provide non-destructive testing of repairs.

H. Report of QC Testing and Inspection
1. Provide written quality control reports for all testing and observations made.

a. Provide reports to the Owner at the end of each day.
b. Provide copies of all field laboratory test results within 24 hours of completion of tests.

I. Manufacturer's/Installer's Field Services
1. The membrane installer shall provide a full-time superintendent experienced in the installation of HDPE membrane to both supervise and provide technical expertise at all times during installation.
2. The membrane installer shall certify in writing to the Owner or the Owner’s representative, that the subgrade is suitable and acceptable for installation of the liner material.

J. "As-Built" Report
Provide an "as-built" drawing summarizing panel locations, destructive sample locations, and repair locations within 10 days of the completion of the installation. Drawing shall be to scale and provided in electronic format compatible with AutoCAD using the site coordinate system.

END OF SECTION

SECTION 32 15 00

AGGREGATE SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Aggregate.
   2. Geotextile Fabric for Ground Stabilization.

B. Material quality control testing shall be included in the bid price.

1.2 REFERENCES

A. Iowa Department of Transportation (IDOT)
   1. Standard Specifications for Highway and Bridge Construction, including Supplemental Specifications and Recurring Special Provisions
   2. Any American Association of State Highway and Transportation Officials (AASHTO) references indicated in the IDOT Standard Specifications.
   3. Any ASTM International (ASTM) references indicated in the IDOT Standard Specifications.

1.3 SUBMITTALS

A. Submit the results of quality control testing (include location where test was done):
   1. Material testing results required for the Surface Aggregate and Macadam Stone Base per the IDOT Standard Specifications Articles 4120 and 4122.

B. Submit daily one copy of weight tickets showing the net weight for each truckload of crushed aggregate base material delivered and placed.

1.4 QUALITY ASSURANCE

A. Obtain an independent testing laboratory approved by the Owner to provide quality control testing.

1.5 DELIVERY, STORAGE AND HANDLING

A. Stockpiling of Aggregates:
   1. Store aggregates to prevent contamination by foreign matter or by aggregates of different sizes.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Surface Aggregate - Class A – Grade 11 quality or better as defined in IDOT Standard Specifications for Highway and Bridge Construction Article 4109.02, including Supplemental Specifications and Recurring Special Provisions.
   1. Test aggregate material per IDOT requirements to determine gradation and quality, including Articles 4120.

B. Macadam Stone Base - Gradation 13 quality or better as defined in IDOT Standard Specifications for Highway and Bridge Construction Article 4109.02, including Supplemental Specifications and Recurring Special Provisions.
   1. Test aggregate material per IDOT requirements to determine gradation and quality, including Articles 2210 and 4122.

C. Recycled shingles provided by Owner shall be used in place of the macadam stone base as available.

D. Geotextile Spec Section 31 32 19.

PART 3 - EXECUTION

3.1 PREPARATION

A. Establish grades, lines, and levels in accordance with the grades shown on the Drawings. Compact the subgrade in accordance with the appropriate Section.

B. Fine grade the subgrade to meet subgrade elevations as shown on the Drawings.

3.2 GEOTEXTILE

A. Place Geotextile over prepared subgrade in accordance with Spec Section 31 32 19.

3.3 MADACAM, RECYCLED SHINGLES, AND SURFACE AGGREGATE PLACEMENT

A. Place Macadam and/or Recycled Shingles as available in lifts as needed to achieve a firm, unyielding surface.

B. Place Surface Aggregate over Macadam and Recycled Shingles in lifts as needed to achieve a firm, unyielding surface.

3.4 FIELD QUALITY CONTROL

A. Proof roll under the observation of Engineer.

END OF SECTION

SECTION 32 92 19

SEEDING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
   1. Topsoil
   2. Seeding
   3. Fertilizing
   4. Mulching
   5. Maintenance

1.2 REFERENCES

A. Iowa Department of Transportation (IDOT) (Statewide Urban Design and Specifications [SUDAS] Section 9010)
   1. Standard Specifications for Highway and Bridge Construction, including Supplemental Specifications and Recurring Special Provisions (Standard Specifications)

B. ASTM International (ASTM)
   1. ASTM D5268 Standard Specification for Topsoil Used for Landscaping Purposes

C. American Association of State Highway and Transportation Officials (AASHTO)
   1. AASHTO M140 Emulsified Asphalt.

D. Association of Official Seed Analysis (AOSA)
   1. Rules for testing seed.

E. Iowa Department of Agriculture
   1. Iowa Seed Law

1.3 SUBMITTALS

A. Quality Assurance/Control Submittals
   1. Topsoil
      a. Provide results of topsoil analysis performed in accordance with ASTM D5268 and demonstrating the topsoil meets Soil Conservation Service specified soil types.

b. Provide results of tests for nutrient levels and provide recommendations for fertilizer type and application.
c. Provide producer's guarantee of composition.

2. Fertilizer
   a. Provide certification from supplier attesting to brand name, chemical analysis, and guarantee of analysis.
3. Seed
   a. Provide certification of conformance with AOSA "Rules for Testing Seed" and attest to mix, age, weed content, purity, and germination.
   b. Provide certification of conformance with Iowa Seed Law.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver seed mixture in sealed containers marked with the following information (Damaged packaging is not acceptable and shall be removed from the site):
   1. Name and address of manufacturer.
   2. Name brand or trademark
   3. Net weight in pounds of materials in the package
   4. Chemical composition or analysis
   5. Percentage of seed mix
   6. Year of production
   7. Date of packaging
   8. Location of packaging
   9. Minimum purity and germination
   10. Confirmation of acceptance per Iowa Seed Law

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis and name of manufacturer.

C. Store all products in a manner to prevent damage, in a secure place, out of the way of construction operations. Provide protection until ready for use.

1.5 MAINTENANCE

A. Provide continuous maintenance service until such time as a uniform stand of grass has been developed, including, but not limited to, watering, mowing, weeding, reseeding bare spots and reworking as required to obtain a uniform stand of grass.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. Topsoil shall consist of adequate mineral and organic content to support the growth of the intended vegetation and shall not contain deleterious substances including

herbicides, roots, sticks, weeds, and waste. The pH of the topsoil shall be between 6.0 and 7.0.

2.2 SEED

A. Seeds and seeding mixtures shall meet the requirements of IDOT Standard Specifications Section 4169 or 2601, and as follows:

1. Areas above the utilities located along the roadways: Use IDOT Standard Specifications Seed Mix Table 2601.03-1.
2. Areas with slopes 3:1, or steeper: Add to the other seeding mixtures 30 pounds per acres of perennial rye grass.
3. Areas not typically mowed, slopes and ditches use IDOT Standard Specifications Special Ditch Control Seed Mix Section 2601-K, including the stormwater ponds.
4. Areas which cannot be permanently seeded shortly after surface preparation shall receive a temporary erosion control seeding mixture based on the time and location. Use Stabilizing Crop Mixture, IDOT Standard Specifications Section 2601-C

2.3 FERTILIZER

A. Fertilizer shall be a complete commercial fertilizer of organic base; free flowing and suitable for application with mechanical equipment.

B. Distribute fertilizer evenly distributed with a mechanical spreader at a rate of 120 lbs. per acre of actual nitrogen, 120 lbs. per acre of P_2O_5 and 120 lbs. per acre of K_2O.

2.4 MULCH

A. Mulch shall consist of straw, hay, marsh hay, or wood chips which are free of noxious weeds and other objectionable foreign matter.

1. If wood chips are used, the mulch area shall be treated with one (1) pound of available nitrogen per 1,000 square feet.

B. Erosion Control Blankets

1. Provide Erosion Control Blankets and accessory materials in accordance to IDOT Standard Specifications.
2. Provide where shown on the Drawings and in swales, ditches, or channels.

2.5 WATER

A. Provide water that is clean, fresh, and free of substances or matter which would inhibit vigorous growth of grass.

PART 3 - EXECUTION

3.1 FERTILIZING

A. Fertilize the seeded areas as needed to establish plant growth.

3.2 TOPSOILING AND SEED BED PREPARATION

A. Prepare area to be seeded and place topsoil as needed to establish plant growth.

3.3 SEEDING

A. Seeding methods shall be in accordance to IDOT Standard Specifications, Section 2601.

B. Apply seed as needed to establish plant growth.

3.4 MULCHING

A. Mulching and Erosion Control Blankets shall be in accordance to IDOT Standard Specifications, Section 4169.

3.5 WATERING

A. Adequately water the seeded areas following the seeding and periodically as needed to establish plant growth.

3.6 MAINTENANCE

A. Maintain a watering schedule to prevent soil from drying out until an adequate stand has been established.

B. Repeat seeding operations until a satisfactory uniform stand is established.

C. Repair damage resulting from erosion, gulley, washouts, or other causes by filling with topsoil, tamping, re-fertilizing, and reseeding by the Contractor at no additional compensation.

D. Maintenance period shall be one (1) year after date of Substantial Completion.

END OF SECTION

SECTION 33 05 05

TESTING AND INSPECTION OF GAS HEADER PIPELINE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes.
   1. Pressure and leakage tests for gas header pipeline.

1.2 REFERENCES

A. ASTM International (ASTM)
   1. F1417-Standard Practice for Installation Acceptance of Plastic Non-pressure Sewer Lines Using Low-Pressure Air.

1.3 SUBMITTALS

A. Quality Control Submittals
   1. Test reports and results.
   2. Proposed method to correct deficiencies.
   3. Record of deficiency repair method and location.

1.4 FIELD QUALITY CONTROL

A. Notify Engineer at least 48 hours prior to testing and when testing equipment is set up and ready.

B. Perform testing in the presence of the Engineer. Provide access to equipment to enable the Engineer to monitor and record test results.

C. After correcting deficiencies, repeat tests until satisfactory test results are obtained.

D. Obtain Engineer's prior approval of proposed methods of correcting deficiencies.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Low pressure Air Test
   1. Inflatable pipe plugs.
   2. Bracing, compressor.
   3. Hose, fittings, and pressure gauges

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean pipelines and manholes of debris, soil, and construction material. Enable visual inspection of entire pipeline interior.

B. Repair or replace piping, valves, fittings, manholes, and components which have visible defects or leakage, before commencing tests.

3.2 LOW PRESSURE AIR TESTING

A. Preparation
1. Install appurtenances including, but not limited to fittings, laterals, stubs, valves, and structures prior to testing.
2. Plug pipe outlets, including laterals, to contain testing pressure.

B. Procedure
1. Pressurize pipeline to 10.0 psi and allow time to stabilize.
2. When pressure has stabilized, start test and record time.
3. Conduct the test for one (1) hour.
4. If pressure drops more than 1.0 psi during the test time, the test is a failure.

END OF SECTION

SECTION 33 05 33

HDPE PIPE AND FITTINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. High-density polyethylene (HDPE) pipe and fittings for all gravity and pressure pipe for conveyance of leachate and landfill gas.

1.2 REFERENCES

A. ASTM International (ASTM)

1.	ASTM D638	Standard Test Method for Tensile Properties of Plastics
2.	ASTM D1238	Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
3.	ASTM D1505	Standard Test Method for Density of Plastics by the Density-Gradient Technique
4.	ASTM D1598	Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
5.	ASTM D1599	Standard Test Method for Resistance to Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing and Fittings
6.	ASTM D2122	Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
7.	ASTM D2290	Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe by Split Disk Method
8.	ASTM D2837	Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
9.	ASTM D3261	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Pipe and Tubing
10.	ASTM D3350	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

B. American Water Works Association (AWWA)

1.	AWWA C901	Standard for Polyethylene (PE) Pressure Pipe and Tubing, ½ in.(13 mm) Through 3 in. (76 mm) for Water Service
2.	AWWA C906	Standard for Polyethylene (PE) Pressure Pipe and Fittings, 4 in. (100 mm) Through 63 in. (1,575 mm), for Water Distribution and Transmission

C. National Sanitation Foundation (NSF)

1.	NSF No. 14	Plastics Piping Components and Related Materials

1.3 SUBMITTALS

A. Product Data
   1. Provide product data on pipe and fittings including dimensions and perforation patterns.

B. Quality Assurance/Control Submittals
   1. Certification that the tests required by this specification section were performed and meet the stated minimum requirements.
   2. Evidence from the pipe manufacturer that the personnel completing joints is qualified to perform the thermal butt fusion.
   3. Manufacturer’s instructions and procedures for joining the pipe and pipe fittings.

1.4 QUALITY ASSURANCE

A. Pipe shall be available to Owner's representative for inspection.

B. Material manufacturer, pipe diameters and pressure classes shall not be mixed.

C. Personnel completing the joints shall be certified by the pipe manufacturer as being qualified to perform the thermal butt fusion.

1.5 DELIVERY, STORAGE AND HANDLING

A. Upon delivery inspect pipe and fittings for damage, cracks, holes, or foreign inclusions.

B. Check date of production to verify the pipe will be installed within six (6) months of date of production.

C. Store pipe and accessories on flat level ground with no rocks or other objects under the pipe.

PART 2 - PRODUCT

2.1 MATERIALS

A. Pipe Sizes 4-inch and Larger
   1. Pipe and fittings shall be high density polyethylene (HDPE) meeting AWWA C906 standards.
   2. Materials used for the manufacture of the HDPE pipe and fittings shall be made from a PE 3408 resin compound meeting the minimum cell classification of PE 345434C in accordance with ASTM D3350 and the hydrostatic design basis of 1,600 psi determined in accordance with ASTM D2837.

3. Provide pipe with a dimension ratio (DR) of 11, pressure class 160 unless stated otherwise on the Drawings or in the Bid Schedule.
4. Pipe shall be installed within 6 months of the production date.

B. Fittings
1. Fittings shall meet the requirements of AWWA C901 or AWWA C906 whichever applies.
2. Fittings for pipe greater than 3 inches diameter shall be HDPE molded fittings and HDPE fabricated fittings of the same equivalent dimension ratio, pressure rating and outside diameter as the connecting pipe.
   a. The pipe manufacturer shall mold or fabricate and supply all HDPE molded fittings, fabricated fittings, accessories and adapters required to perform the Work. No Contractor fabricated fittings shall be used.
   b. Molded fittings shall be manufactured with thermal butt-fused joints meeting the requirements of ASTM D3261.
   c. Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings.

2.2 PIPE IDENTIFICATION

A. Mark the pipe and fittings with the appropriate standard AWWA C901 or AWWA C906 whichever is applicable to affirm the product was manufactured, inspected, sampled, and tested in accordance with the standard.

B. Pipe and fittings shall be marked with the following at intervals between markings of no greater than 5 feet:
1. Nominal size and OD base of DIOD.
2. Standard material code designation of PE 3408.
3. Dimension ratio.
4. Pressure class
5. AWWA C901 or AWWA C906, whichever is applicable.
6. Manufacturer’s production code to include day, month, year produced.

2.3 JOINTS

A. HDPE Pipe and Pipe Fittings Greater than 3 inches Diameter
1. Pipe and pipe fittings shall be designed for joining by thermal butt fusion.
2. Joining method shall be capable of conveying water at the pressure designated by the pressure class.
3. Joints shall be pipe end to pipe end and pipe end to fitting.

B. Transition from HDPE to Ductile Iron Pipe or PVC Pipe
1. Provide a molded flange connector adapter with a ductile iron back-up flange for making a flange to flange connection. If the connecting pipe is plain end then use an EBAA Iron Inc. Megaflange 2100 Restrained Flange Adaptor on the connecting pipe.

2. For buried connections use a mechanical joint connection adaptor with a mechanical joint flange backup connecting to a mechanical joint pipe ductile iron pipe and when connecting to a plain end PVC pipe provide an EBAA Iron Inc. use the series 15PF00 for Restraint for C900 PVC Pipe.
   a. Provide extended T-bolts for the connection.
   b. Provide stainless steel stiffener inserted in the pipe.
3. From the transition joint pipe restrains shall be provided at all joints within the following distances of the transition joint:
   a. 6" diameter pipe - 15 linear feet.
   b. 8" diameter pipe - 19 linear feet.
   c. 10" diameter pipe - 24 linear feet.
   d. 12" diameter pipe - 28 linear feet.
   e. 14" diameter pipe - 33 linear feet.
   f. 16" diameter pipe - 36 linear feet.

2.4 SOURCE QUALITY CONTROL

A. The following tests shall be performed on the production pipe:
1. Measurement of pipe dimensions in accordance with ASTM D2122.
   a. Pipe dimensions shall be within the tolerances stated in AWWA C906 or AWWA C901 whichever is applicable.
   b. Wall thickness variability in any diametrical cross section of the pipe shall not exceed 12%.
   c. The outside diameter measured at the cut-end of the pipe length shall not be more than 1.5% smaller than the average outside diameter specified in AWWA C906 or AWWA C901, whichever is applicable, when measured at any point not closer than 12 inches to the squarely cut-end of the pipe length.
2. Thermal stability of a pipe specimen from mid-wall area in accordance with the method described in ASTM D3350. The minimum induction temperature shall be 220ºC.
3. Ring-tensile strength test of pipe specimens tested in accordance with ASTM D2290. Tensile strength shall be not less than 2,900 psi.
4. Quick burst test of pipe specimens in accordance with ASTM D1599. The test pressure at failure shall not be less than that which results from the minimum hoop stress value of 2,900 psi.
5. Elongation at break test of five pipe specimens cut equally spaced around the circumference of the pipe in the longitudinal direction tested in accordance with ASTM D638 using a cross-head separation of 2 inches per minute. The elongation at break for each test specimen shall not exceed 400%.
6. Five-second pressure test of a section of pipe tested in accordance with ASTM D1598. The pipe shall not burst, crack, spit, or otherwise fail a test pressure four times the pipe pressure class applied for five seconds. This test is also required for fittings.
7. Melt index of pipe specimens tested in accordance with ASTM D1238. The resultant index shall be less than 0.15.
8. Density of pipe specimens tested in accordance with ASTM D2839. The result shall be minimum 0.955 grams per cubic centimeter.

9. Bend-back test in accordance with AWWA C901 or AWWA C906 whichever is applicable. Any indication of cracking or crazing shall reject the pipe.

B. Test the PE compounds by an accredited testing agency in accordance with the applicable requirements of NSF No. 14 to demonstrate the materials are suitable for use with potable water.

PART 3 - EXECUTION

3.1 POLYETHYLENE PIPE INSTALLATION

A. In addition to the applicable sections for installing piping, conform to the following:
1. Thermal butt fuse all joints as per ASTM D2657.
2. Utilize certified personnel for jointing operation.

END OF SECTION

SECTION 33 42 13

STORMWATER CULVERTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Reinforced precast concrete pipe.
   2. Corrugated metal pipe.

1.2 REFERENCES

A. Iowa Department of Transportation (IDOT)
   1. Standard Specifications for Highway and Bridge Construction, including Supplemental Specifications and Recurring Special Provisions
   2. Any American Association of State Highway and Transportation Officials (AASHTO) references indicated in the IDOT Standard Specifications.
   3. Any ASTM International (ASTM) references indicated in the IDOT Standard Specifications.

1.3 SUBMITTALS

A. Reinforced concrete pipe- submit test results and manufacturer's information as required by IDOT Standard Specification Article 4145. (Statewide Urban Design and Specifications [SUDAS] Section 4020)

B. Corrugated metal pipe – submit test results and manufacturer's information as required by IDOT Standard Specification Article 4141. (SUDAS Section 4030)

1.4 QUALITY ASSURANCE

A. Pipe shall be available to Owner's Representative for inspection.
B. Perform testing as required by IDOT Standard Specifications 4141 and 4145.

1.5 DELIVERY, STORAGE AND HANDLING

A. Upon delivery ensure that the pipe is clearly marked with the following information:
   1. Pipe class or strength designation.
   2. Date of manufacture.
   3. Name or trademark of manufacturer.
   4. Plant identification.

B. Store material to protect from damage and do not stack in layers.

PART 2 - PRODUCTS

2.1 CONRETE PIPE

A. Conform to IDOT Standard Specification Article 4145.

2.2 CORRUGATED METAL PIPE

A. Conform to IDOT Standard Specification Article 4141.

PART 3 - EXECUTION

3.1 CONRETE PIPE

A. Conform to IDOT Standard Specification Article 2419.

3.2 CORRUGATED METAL PIPE

A. Conform to IDOT Standard Specification Article 2417.

3.3 FIELD QUALITY CONTROL

A. Inspect and reject pipe for the following defects:
   1. Improper marking.
   2. Fractures or cracks passing through wall, except for a single end crack that does not exceed depth of joint.
   3. Defects indicating non-compliance with proportioning, mixing and molding of the concrete.
   4. Surface defects indicating honeycombed or open texture.
   5. Ends are not normal to the wall and center line of the pipe.
   6. Damaged or cracked ends.
   7. Any continuous crack having a width of 0.01 inch or more and extending for a length of 12 inches or more.

END OF SECTION

SECTION 33 46 23

GEOSYNTHETIC DRAINAGE LAYER

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Geosynthetic drainage layer.

1.2 REFERENCES

A. ASTM International (ASTM)
1. ASTM D413 – Standard Test Method for Rubber Property – Adhesion to Flexible Substrate.
2. ASTM D1505 – Standard Test Method for Density of Plastics by the Density-Gradient Technique.
3. ASTM D4218 – Standard Test Method for Determination of Carbon Black Content in Polyethylene Compounds By the Muffle-Furnace Technique.
4. ASTM D4491 – Standard Test Method for Water Permeability of Geotextiles by Permittivity.
5. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
6. ASTM D4716 – Test Method for Determining the (In-place) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head.
7. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile.
8. ASTM D5199 – Standard Test Method for Measuring Nominal Thickness of Geosynthetics.
9. ASTM D5261 – Standard Test Method for Measuring Mass per Unit Area of Geotextiles.
10. ASTM D5596 – Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics.

1.3 SUBMITTALS

A. Submit manufacturer’s product data, describing the material type and the specified properties.

B. Submit shop drawings showing locations and construction methods and procedures for seams, penetrations, fasteners, and anchors.

C. Submit manufacturer’s installation recommendations and repair procedures.

D. Submit the results of manufacturer’s quality control (QC) testing for each roll of material.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver the geocomposite material wrapped to protect the fabric from damage during shipping, handling, ultraviolet (UV) radiation, and abrasion.

B. Upon receipt of the geocomposite material at the site, inspect each roll to verify that it is properly wrapped, properly labeled, and undamaged.

C. Store the geocomposite in a dry, protected location until installed.

D. Do not stack rolls of material.

E. While unrolling the geocomposite for installation, inspect for damage or defects. Repair or replace any damaged material in accordance with the manufacturer's instructions.

PART 2 - PRODUCTS

2.1 GEOSYNTHETIC DRAINAGE LAYER

A. Geonet drainage core:
1. Manufacture drainage core of the geosynthetic drainage layer with polyethylene (PE) polymer geonet that is clean and free of any foreign contaminants.
2. Regrind material that consists of edge trimmings and other scraps may be used to manufacture the geonet; however, post-consumer recycled materials shall not be used.

B. Geotextile filtration layer:
1. Manufacture filtration layer of the geosynthetic drainage composite with nonwoven geotextile material.

C. Geocomposite:
1. Cover the geonet on top and bottom (double-sided) with the geotextile filtration layer.
2. Create geocomposite by heat bonding geotextile to the geonet.
3. Label each roll of the geotextile filtration layer with the manufacturer's name, product identification, lot number, roll number and roll dimensions.

D. Geosynthetic drainage layer properties:
1. The geocomposite and its components shall meet the property requirements stated in Table 1.
   a. Where applicable, Table 1 property values represent minimum average roll values (MARV) in the weakest principal direction.
   b. The value for AOS represents the maximum average roll value.

Table 1 – Geosynthetic Drainage Layer Properties

Property	Test Method	Test Value	Minimum Testing Frequency
GEONET			
Thickness, minimum average	ASTM D 5199	200 mil	15,000 lb
Thickness, lowest individual	ASTM D 5199	-10%	15,000 lb
Polymer Density, minimum	ASTM D 1505	0.940 g/cc	200,000 lb
Carbon Black Content	ASTM D 4218	2 to 3%	15,000 lb
Carbon Black Dispersion	ASTM D 5596	See note[1]	45,000 lb
GEOTEXTILE			
Mass/Unit Area, minimum	ASTM D 5261	8.0 oz/sq yards	20,000 sq. yards
Grab Strength, minimum	ASTM D 4632	220 lb	20,000 sq. yards
Permittivity, minimum	ASTM D 4491	1.0/sec	100,000 sq. yards
AOS (095), maximum	ASTM D 4751	80 sieve	100,000 sq. yards
GEOCOMPOSITE			
Transmissivity, minimum, including attached geotextiles[2]	ASTM D 4716	20 gal/min-foot	100,000 sq. yards
Geonet/Geotextile adhesion[3]	ASTM D 413	1.0 lb/inch	100,000 sq. yards

Notes:
[1] Carbon black dispersion for 10 different views: 8 of 10 in Category 1 or 2; and all 10 in Category 1, 2, or 3.
[2] Manufacturing quality control transmissivity tests shall be measured using water at 20 degrees Celsius (°C) with a gradient of 0.1 under a normal pressure of 10,000 pounds per square foot (psf). A minimum seating period of 15 minutes shall be used.
[3] Average of five equally spaced tests across the roll width.
Abbreviations:
% = percent
g/cc = grams per cubic centimeter
gal/min-foot = gallons per minute-foot
lb = pound
lb/inch = pounds per inch
sec = second
sq. yards = square yards

2.2 SOURCE QUALITY CONTROL

A. Provide quality control testing at the manufacturer's location using the test methods and frequencies stated in Table 1.

B. At a minimum, test each roll in accordance with Table 1.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to placement of the geosynthetic drainage layer, clean the subgrade of all materials that could damage or interfere with the function of the drainage layer.

B. Lay out the work in accordance with the manufacturer's recommendations and shop Drawings.

3.2 INSTALLATION

A. Placement:
1. Do not damage the geosynthetic drainage layer during placement.
2. Roll the geosynthetic drainage layer in the direction of maximum slope, keeping the geosynthetic flat against the subgrade (geomembrane) to minimize wrinkles and folds.
3. Do not drag the drainage layer across textured geomembrane.
4. Place adequate ballast (e.g., sandbags) to prevent uplift by wind prior to covering.

B. Seams and overlaps:
1. Geonet side seams:
   a. Overlap geonet side seams by a minimum of 100 millimeters (mm) (4 inches).
   b. Space side seam fasteners a maximum of 1.5 meters (m) (5 feet) apart.
   c. In anchor trenches, space fasteners a maximum of 305 mm (1 foot) apart.
2. Geonet end seams:
   a. Overlap geonet end seams by a minimum of 305 mm (1 foot).
   b. Space end seam fasteners a maximum of 150 mm (6 inches) apart.
   c. Place overlaps in the direction of flow.
   d. Provide geonet-to-geonet contact at geocomposite end seam connections.
   e. Do not place end seams on side slopes steeper than 4 horizontal to 1 vertical (4H:1V) unless specifically approved by the Engineer.
   f. End seams shall not be within 10-LF of the radius ends of slope shoulders or elbows.
3. Geonet Fasteners
   a. Tie geonet rolls together with plastic fasteners.
   b. The fasteners shall be a contrasting color from the geonet and attached geotextiles.
   c. Do not use metallic fasteners.
4. Geotextile seams:
   a. Overlap the geotextile component of the geocomposite in the direction of flow.
   b. Cover the holes placed in geotextile to allow seaming of geonet rolls by placing geotextile cap strips.
   c. Cap strips shall be a minimum of 610 mm (2 feet) in width and thermally bonded to the geotextile component of the geocomposite.
5. Geocomposite edges:
   a. Place cap strips over any exposed edges of geocomposite.
   b. Cap strips shall be a minimum of 610 mm (2 feet) in width and thermally bonded to the geotextile component of the geocomposite.

C. Stacked geosynthetic drainage layers:
1. When geosynthetic drainage layers are to be stacked, stagger roll ends and edges so that joints do not lie above one another.

2. Place stacked layers in the same direction and in a manner that prevents interlocking.

D. Corners:
1. In the corners of side slopes, install an extra layer of drainage layer material from the top to the bottom of the slope.

E. Penetrations:
1. Attach a geotextile apron to penetrations so that soil is prevented from getting into the drainage layer.
2. Extend the apron of the attached geotextile out from the penetration a minimum of 610 mm (2 feet).
3. Thermally bond the apron geotextile to the geotextile component of the geocomposite.

3.3 REPAIRS

A. Geonet damage:
1. Make repairs by placing a patch of the geosynthetic drainage layer over the damaged area.
2. Extend the patch a minimum of 610 mm (2 feet) beyond the edge of the damage.
3. Use approved fasteners spaced every 150 mm (6 inches) around the patch to hold the patch in place.
4. If more than 25 percent of the roll width is damaged, obtain a determination from the Engineer as to whether it can be repaired or requires replacement.

B. Geotextile damage:
1. Repair damaged geotextile by placing a patch of geotextile over the damaged area with a minimum of 305 mm (12 inches) of overlap in all directions.
2. Thermally bond the geotextile patch in place.

3.4 PROTECTION AND BACKFILLING

A. Upon completion of installation, obtain acceptance from the Engineer prior to covering.

B. Cover the geosynthetic drainage layer with the specified materials within 14 days of acceptance.

END OF SECTION

Drawings

(ISSUED FOR BID)

CELL 10 AND STORMWATER POND
SCOTT AREA LANDFILL
WASTE COMMISSION OF SCOTT COUNTY

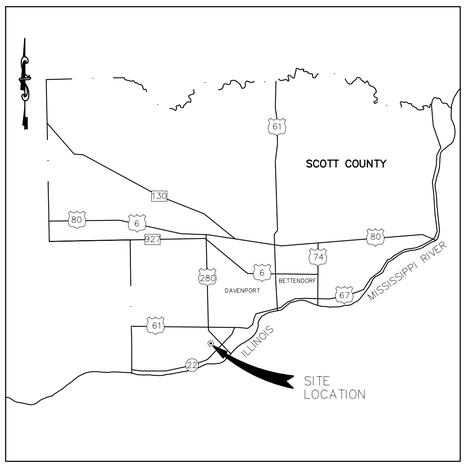
DAVENPORT
SCOTT COUNTY, IOWA
OCTOBER 2025

Prepared for:
Waste Commission of Scott County

Waste Commission of Scott County

Prepared by:
Foth Infrastructure & Environment, LLC

Foth



VICINITY MAP



LOCATION MAP

DRAWING INDEX

SHEET NUMBER	TITLE
G.01	COVER SHEET
G.02	LEGEND AND ABBREVIATIONS
G.03	SITE MAP
C1.01	EXISTING CONDITIONS
C1.02	UNDERDRAIN PLAN
C1.03	BASE GRADE PLAN
C1.04	LEACHATE COLLECTION & GAS SYSTEM PLAN
C1.05	STORMWATER & EROSION CONTROL PLAN 1 OF 2
C1.06	STORMWATER & EROSION CONTROL PLAN 2 OF 2
C3.01	ENGINEERING CROSS SECTIONS
C3.02	UNDERDRAIN HEADER PROFILE
C5.01	DETAILS - UNDERDRAIN
C5.02	DETAILS - UNDERDRAIN
C5.03	DETAILS - LINER
C5.04	DETAILS - LEACHATE COLLECTION
C5.05	DETAILS - STORMWATER

LICENSED PROFESSIONAL ENGINEER
ANDREA SUE LORENZ
P27525
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISON AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Andrea S. Lorenz

ANDREA SUE LORENZ, P.E. OCTOBER 17, 2025
LICENSE NUMBER: P27525

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025

PAGES OR SHEETS COVERED BY THIS SEAL:
ALL SHEETS COVERED

SHEET TITLE:
COVER SHEET

ISSUANCE:
(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER
G.01

Friday, October 17, 2025 3:00:48 PM
DWG Filename: g01 title sheet.dwg Layout: layout1
DWG Folder Location:

SECTION 00 41 43

UNIT PRICE BID SCHEDULE

Provided for reference: Bid shall be submitted via the Bidding Website QuestCDN.com

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Extension
1	Mobilization/Demobilization	lump sum	1		
2	Erosion Control	lump sum	1		
3	Clearing and Grubbing	lump sum	1		
4	Common Excavation SUDAS CLASS 10 - Cell 10	cubic yards	208,000		
5	Structural Fill - Cell 10 Subbase/Perimeter Road	cubic yards	28,000		
6	Placement of Soil in Stockpile - Cell 10	cubic yards	180,000		
7	Underdrain Trenches Without Pipe	lineal feet	2,965		
8	Underdrain Trench With Lateral Pipe and Cleanout	lineal feet	648		
9	Underdrain Trench With Header Pipe	lineal feet	390		
10	Underdrain Sump and Riser	lump sum	1		
11	Load, Haul, and Place Underdrain Drainage Material	cubic yards	598		
12	Structural Fill for Underdrain Trench	cubic yards	741		
13	Compacted Clay Liner	cubic yards	27,705		
14	Smooth HDPE Liner	square feet	190,273		
15	Textured HDPE Liner	square feet	183,748		
16	Geocomposite Drain Net	square feet	374,021		
17	Leachate Collection Perforated Piping and Geotextiles	lineal feet	551		
18	Leachate Collection Solid Piping	lineal feet	353		
19	Load, Haul, and Place Leachate Coll. Trench Drainage Material	cubic yards	276		
20	Protective Layer	cubic yards	13,853		
21	Gas Header Piping	lineal feet	1,054		
22	Gas Header Stubouts	each	6		
23	Gas Header Connection, Valve	lump sum	1		
24	Perimeter Road With Owner-Provided Shingles	square yards	2,073		
25	Perimeter Road With Macadam Stone	square yards	2,073		
26	Culvert under Perimeter Road	each	1		
27	Dewatering	lump sum	1		
28	Topsoil Stripping - Stormwater Basins	cubic yards	5,200		
29	Excavation SUDAS CLASS 10 - Stormwater Basins	cubic yards	12,448		
30	Structural Fill - Stormwater Basins	cubic yards	10,905		
31	Placement of Soil in Stockpile - Stormwater Basins	cubic yards	1,543		
32	Riprap and Geotextile - Stormwater Basins	lump sum	1		
33	Culvert between Stormwater Basins	each	1		
34	Stormwater Basin Outlet Structure	lump sum	1		
35	Site Restoration	lump sum	1		
				Total Bid Price (Items 1-35) =	

Notes: The listed number of units for bid items are for comparison purposes only and are not guaranteed. Payment will be based on the actual number of units determined by methods described in Section 01 22 05.

ALTERNATE BID ITEMS

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
A-6	Underdrain Drainage Blanket	square feet	269,152		
A-14	Smooth HDPE Liner- White	square feet	190,273		
A-15	Textured HDPE Liner - White	square feet	183,748		

OPTIONAL BID ITEMS

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
A	Excavation within future Cell 11- Winter	cubic yards	500,000		

ALLOWANCES

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
A	Underdrain Trenches SUDAS CLASS 12 - Bedrock Removal	cubic yards	37		
B	Underdrain Trenches - Additional Trenches	lineal feet	1,000		
C	Subgrade- Replacement of Unsuitable Material	cubic yards	2,000		

GENERAL SYMBOLS

EXISTING	PROPOSED	
730	750	CONTOURS (MAJOR)
		CONTOURS (MINOR)
774.9	774.9	SPOT ELEVATION
PB	PB	PUMP BUILDING
E	E	ELECTRIC
OHE	OHE	OVERHEAD UTILITY
FM	FM	FORCEMAIN
SSR	SSR	SIDESLOPE RISER PIPE
LL	LL	LEACHATE LINE
LT	LT	LEACHATE COLLECTION TRENCH
CO	CO	LEACHATE CLEANOUT
		FENCE
		PROPERTY LINE
		UNDERDRAIN TRENCH
UD	UD	UNDERDRAIN PIPE
RL RL	RL RL	LEACHATE RECIRCULATION PIPE
GL	GL	GAS LATERAL PIPE
GH	GH	GAS HEADER PIPE
		DRAINAGE DITCH
		EROSION CONTROL
		PHASE LIMITS
		WASTE LIMITS
	3:1	SLOPE RATIO
	4%	SLOPE PERCENTAGE
		CULVERT
		DRAIN MANHOLE
		MANHOLE
		SEWER MANHOLE
		WATER MANHOLE
		ELECTRIC MANHOLE
		COMMUNICATIONS MANHOLE
		UTILITY POLE
CP-1	CP-2	CONTROL POINT
BM-1	BM-2	BENCHMARK
CO-1	CO-2	CLEANOUT
V-1	V-2	VALVE
GV-1	GV-2	GAS VALVE
GW-1	GW-2	VERTICAL GAS WELL
HGW-1	HGW-2	HORIZONTAL GAS WELL
GP-1	GP-2	GAS PROBE
MW-1		ABANDONED / TO BE ABANDONED MONITORING WELL
M-1	M-2	MONITORING WELL
		MONITORING WELL NEST

CONVENTIONAL SYMBOLS

A / A	CROSS SECTION CALLOUT
MATCH LINE	MATCHLINE
	WATER LEVEL
N	NORTH ARROW

ABBREVIATIONS

ABAN	ABANDON
APPROX	APPROXIMATE
A.C.	ASPHALT CONCRETE
ASR	AUTO SHREDDER RESIDUE/ LEACHATE DRAINAGE LAYER
BB	BORING
BIT	BITUMINOUS
BL	BASELINE
BLDG	BUILDING
BM	BENCH MARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR	BRIDGE
CB	CATCH BASIN
CC	CEMENT CONCRETE
CEM	CEMENT
CI	CAST IRON
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONT	CONTINUED
CONST	CONSTRUCTION
CP	CONTROL POINT
CY	CUBIC YARD
DIA	DIAMETER
DI	DUCTILE IRON
ELEV	ELEVATION
EL.	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
EX	EXISTING
EXC	EXCAVATION
FDN	FOUNDATION
FT	FOOT
GALV	GALVANIZED
GAR	GARAGE
GCL	GEOSYNTHETIC CLAY LINER
GRND	GROUND
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
GW	GAS WELL
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HEADWALL
HOR	HORIZONTAL
HYD	HYDRANT
ID	INSIDE DIAMETER
IN	INCH
INV	INVERT

ABBREVIATIONS (CONT)

JCT	JUNCTION
LEN	LENGTH
LLDPE	LINEAR LOW DENSITY POLYETHYLENE
LB	LEACHING BASIN
LHW	LEACHATE HEAD WELL
LF	LINEAR FEET
LP	LIGHT POLE
LT	LEFT
LYS	LYSIMETER
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MW	MONITORING WELL
NO.	NUMBER
NTS	NOT-TO-SCALE
OD	OUTSIDE DIAMETER
PC	POINT OF CURVATURE
PERM	PERMANENT
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PW	PRIVATE WELL
R	RADIUS
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
RET	RETAINING WALL
ROW	RIGHT-OF-WAY
RR	RAILROAD
RT	RIGHT
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SS	STAINLESS STEEL
SSR	SIDE SLOPE RISER
ST	STREET
STA	STATION
STN	STONE
SW	STORMWATER
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VIF	VERIFY IN FIELD
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

NOTES:
NOT ALL ABBREVIATION ENTRIES SHOWN MAY BE UTILIZED IN THE PLAN SET

NOTES:

1. THE HORIZONTAL CONTROL IS REFERENCED TO THE NAD83 IOWA STATE PLANE COORDINATE SYSTEM (IOWA SOUTH ZONE). VERTICAL CONTROL IS REFERENCED TO NAVD88.
2. TOPOGRAPHY BY PHOTOGRAMATIC METHODS BY SHIVE HATTERY, MARCH, 2024. CELL 9 AS-BUILT BY SCS ENGINEERS OCTOBER 2024.
3. ACTIVITY MAY HAVE OCCURRED WITHIN THE PROJECT AREA SINCE THE DATE OF THE TOPOGRAPHY. CONTRACTOR SHALL VERIFY CONDITIONS AFFECTING THIS PROJECT PRIOR TO BIDDING.
4. CONTRACTOR SHALL ONLY USE DESIGNATED AREAS SHOWN ON THE DRAWINGS.
5. CONTRACTOR IS RESPONSIBLE FOR ALL CONDITIONS OF THE STORM WATER PERMIT (NPDES GENERAL PERMIT No. 1) (OWNER PROVIDED) ACTIVITIES INSIDE THE PROJECT AREA. ALL TEMPORARY AND PERMANENT STORM WATER FEATURES SHOWN OR PART OF THIS PROJECT MUST COMPLY WITH THE PERMIT AND SPECIFICATIONS.
6. UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND AND ABOVE GROUND UTILITIES INCLUDING NOTIFICATION OF IOWA ONE CALL (1-800-292-8989). COORDINATE ALL EXISTING UTILITIES INCLUDING GAS HEADER WITH OWNER AND IOWA ONE CALL PRIOR TO CONSTRUCTION.
7. CONTRACTOR SHALL PROTECT ALL EXISTING INFRASTRUCTURE, TO INCLUDE, BUT NOT LIMITED TO, MONITORING WELLS, GAS COLLECTION WELLS, CULVERTS, ETC.
8. PUMPED WATER FROM DEWATERING FROM CONSTRUCTION SHALL BE DISCHARGED TO EXISTING HICKENBOTTOM LOCATED IN STORMWATER POND SHOWN ON DRAWING C1.01.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION SITE SECURITY DURING THE WORK
10. OWNER HAS A SWPPP FOR THIS SITE. CONTRACTOR TO COMPLY WITH OWNER SWPPP, OWNER STORMWATER PERMIT (NPDES GENERAL PERMIT No. 1), AND THE CONSTRUCTION DOCUMENTS.
11. DONALDSON CREEK SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.
12. CONTRACTOR SHALL PROTECT PAVING AND RESTORE ANY PAVING DAMAGED BY CONSTRUCTION.
13. CONTRACTOR SHALL FOLLOW ACTIVE LANDFILL TRAFFIC PATTERNS AND NOT INTERRUPT LANDFILL ACTIVITIES. COORDINATE WITH OWNER.
14. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS BACK TO ORIGINAL CONDITION AND GRADE TO DRAIN.

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL
WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

LEGEND & ABBREVIATIONS

(ISSUED FOR BID)

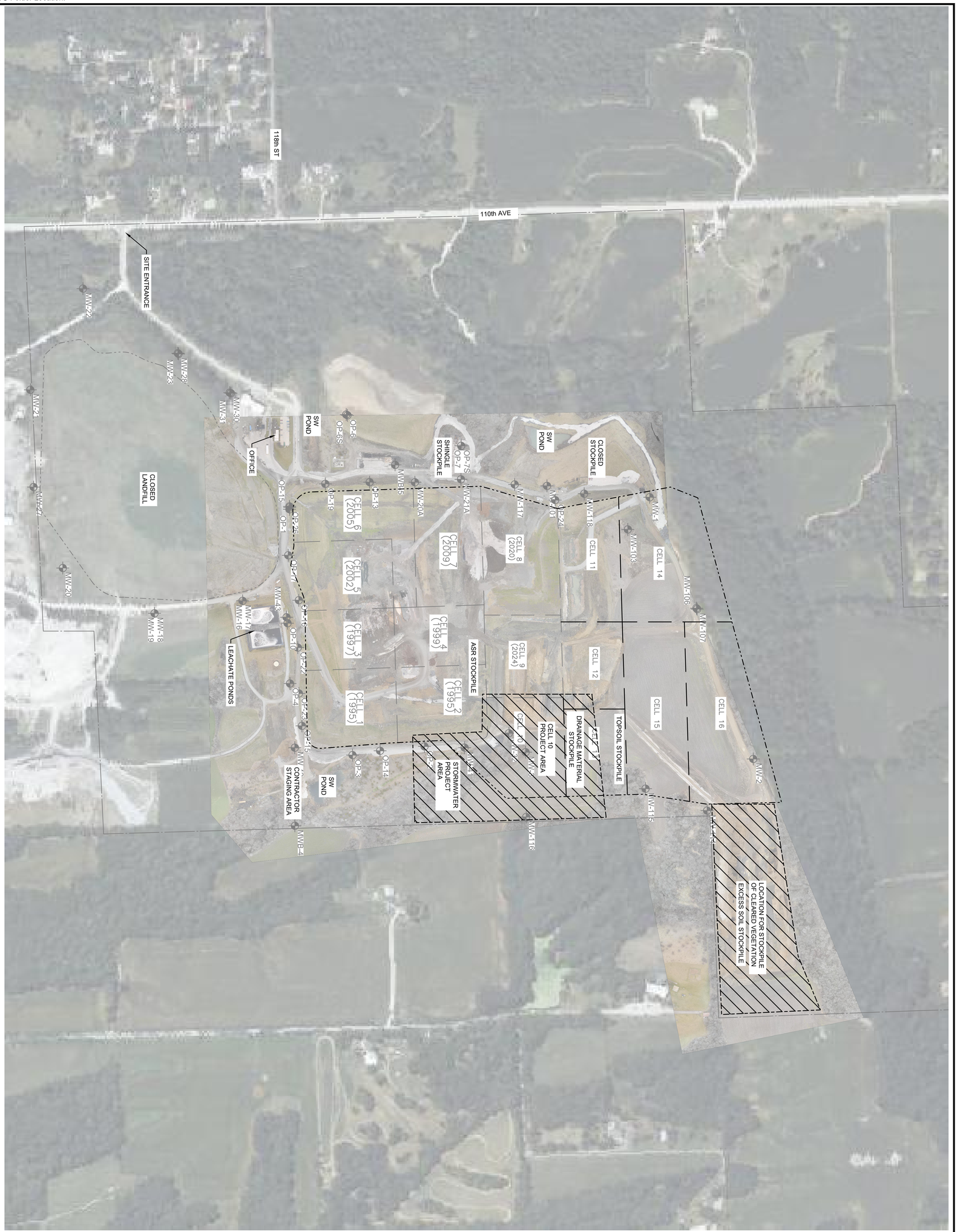
PROJECT NO: 25S040.00

SHEET NUMBER

G.02

Friday, October 17, 2025 3:00:55 PM
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DWG Folder Location:

Friday, October 17, 2025 3:01:07 PM
DWG Filename: g03_site map.dwg Layout: g03
DWG Folder Location:



REVISIONS			
NO	BY	DATE	DESCRIPTION
1			
2			
3			
4			
5			

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

SITE MAP

(ISSUED FOR BID)

PROJECT NO: 255040.00

SHEET NUMBER

G.03

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

Foth

CELL 14

CELL 15

CELL 11

CELL 12

CELL 13

CELL 8
(2020)

CELL 9
(2024)

CELL 10

CELL 7
(2009)

CELL 6
(1999)

MW-1

MW-103

MW-115

MW-118

MW-101

MW-117

MW-21A

MW-20A

MW-3

MW-32

MW-41

MW-116

OP-24

OP-7S

OP-7

OP-13

OP-2

OP-14

MWB-5

GP-2R

GWN-52

GWN-53

GWN-50

GWN-51

GWN-47

GWN-49

GWN-48

GWN-29

GWN-43

GWN-42

GWN-44

GWN-41

GWN-28

GWN-40

GWN-45

GWN-38

GWN-37

GWN-34

GWN-30

GWN-33

GWN-12

GWN-35

GWN-36

GWN-14

GWN-6

GWN-6R

GWN-5

GWN-4

GWN-7

GWN-13

GWN-3

GWN-8

GWR-8

GWR-7

GWR-4

LR-40

LR-39

LR-8

LR-7

LR-6

LR-5

LR-3

LR-2

LR-1

LR-20

LR-25

LR-22

LR-26

LR-29

LR-30

LR-35

LR-34

LR-37

LR-27

LR-28

LR-9

LR-10

LR-18

LR-12

LR-11

EXISTING HICKENBOTTOM
CONTRACTOR TO PROTECT

EXISTING DRAIN PIPES

EXISTING CULVERT
CONTRACTOR TO PROTECT

EXISTING ROAD

EXISTING OVERHEAD
POWER LINE

EXISTING TRANSFORMER

STORMWATER
POND

STORMWATER
POND

EXISTING CULVERT
CONTRACTOR TO PROTECT

EXISTING PROPERTY
BOUNDARY

CONSTRUCTION LIMIT

APPROXIMATE PROPERTY BOUNDARY

CELL 9 CLAY LINER LIMIT

CELL 9 GEOMEMBRANE LIMIT

CELL 9 CLEANOUT
(TO BE REMOVED)
SEE DETAIL
C5.01 | 3

EXISTING UNDERDRAIN (TYP)

EXISTING LEACHATE COLLECTION

TCO

CONSTRUCTION LIMIT

EXISTING MONITORING WELL
CONTRACTOR TO PROTECT

EXISTING MONITORING WELLS
TO BE ABANDONED BY OWNER

GAS HEADER PIPE CAP

EXISTING 14" HDPE
GAS HEADER PIPE

EXISTING GAS PROBE
TO BE ABANDONED BY OWNER

EXISTING MONITORING WELL
CONTRACTOR TO PROTECT

6" HDPE GAS LATERAL
WITH VALVE

GRAPHIC SCALE
0 50 100 200
(IN FEET)
1 INCH = 100FEET

N

Friday, October 17, 2025 3:01:17 PM
DWG Filename: c101_existing conditions.dwg
DWG Folder Location:
Layout: c101

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

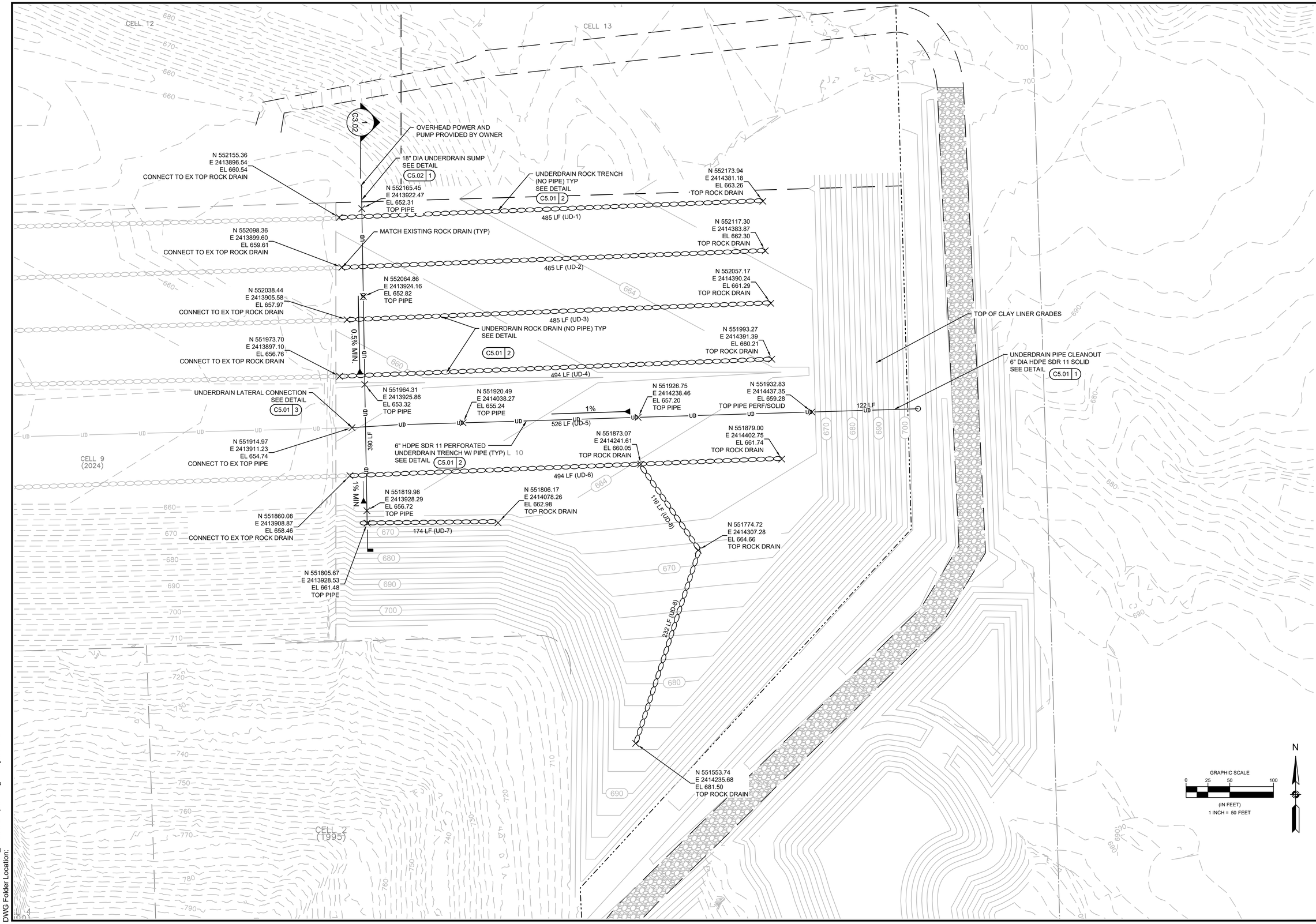
EXISTING CONDITIONS

(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER

C1.01



Friday, October 17, 2025 3:01:27 PM
DWG Filename: c102_underdrain plan.dwg Layout: c102
DWG Folder Location:

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

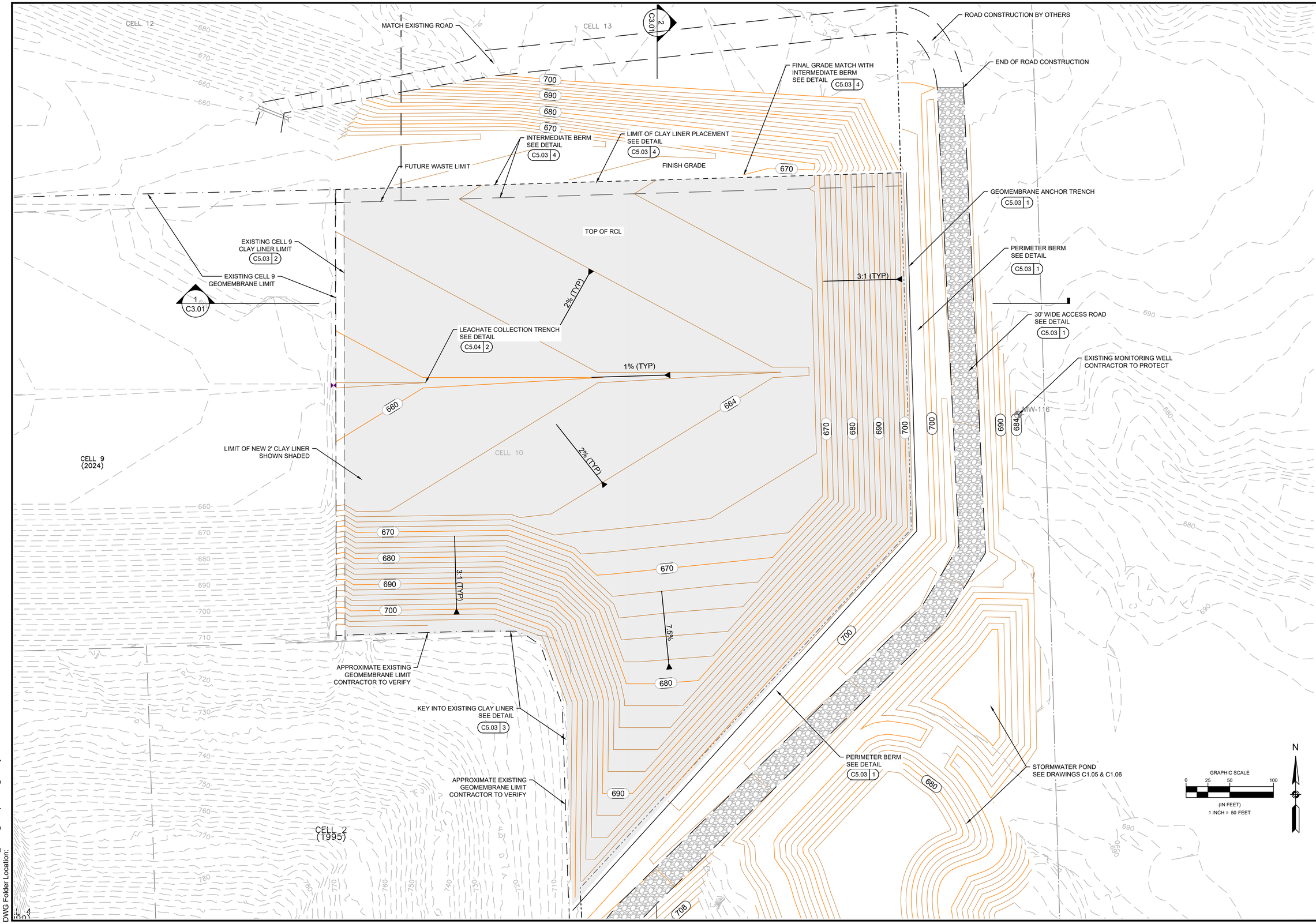
SHEET TITLE:

UNDERDRAIN PLAN

(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER
C1.02



Friday, October 17, 2025 3:01:39 PM
DWG Filename: c103_base grade plan.dwg Layout: c103
DWG Folder Location:

Foth

CONSTRUCTION DRAWINGS FOR CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

BASE GRADE PLAN

(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER

C1.03

CELL 12

CELL 13

CELL 10

700
690
680
670
664
660

BLIND FLANGE

FINISH GRADE

TOP RCL GRADE

6" DIA SOLID HDPE PIPE

216 LF

REMOVE EXISTING CELL 9 CLEANOUT
CONNECT TO 6" PERFORATED HDPE
C5.04 | 3

EXISTING CELL 9
6" HDPE LEACHATE
COLLECTION PIPE

N 551963.17
E 2413882.85
EL 658.45
TIE-IN EXISTING 6" HDPE

WYE AND VALVE
SEE DETAIL
C5.04 | 3

LEACHATE COLLECTION TRENCH
SEE DETAIL
C5.04 | 2

6" DIA. PERFORATED HDPE
LEACHATE COLLECTION PIPE
SEE DETAIL C5.04 | 4

TRANSITION FROM PERFORATED
TO SOLID 6" DIA HDPE PIPE

1% (TYP)

137 LF

0.2% (TYP)

N 552300.90
E 2414549.43
EL 699.30
END CAP 14" HDPE

N 552197.81
E 2414552.29
EL 699.09
top 14" HDPE

LFG HEADER STUBOUT
SEE DETAIL
C5.04 | 5

N 552097.85
E 2414555.06
EL 698.89
top 14" HDPE

N 551998.21
E 2414557.83
EL 698.69
top 14" HDPE

CO

6" DIA. LEACHATE PIPE CLEANOUT
SEE DETAIL
C5.04 | 1

N 551897.94
E 2414560.61
EL 698.49
top 14" HDPE

LFG HEADER STUBOUT
SEE DETAIL
C5.04 | 5

14" DIA. HDPE SDR 17 GAS HEADER PIPE
SEE DETAIL C5.04 | 7

N 551797.73
E 2414563.39
EL 698.29
top 14" HDPE

LFG HEADER STUBOUT
SEE DETAIL
C5.04 | 5

N 551755.34
E 2414524.75
EL 698.18
top 14" HDPE

CLEANOUT EXTENSIONS
(BY OWNER)

CO
CO

N 551681.30
E 2414457.27
EL 697.98
top 14" HDPE

LFG HEADER STUBOUT
SEE DETAIL
C5.04 | 5

N 551607.61
E 2414390.11
EL 697.78
top 14" HDPE

0.2% (TYP)

N 551533.64
E 2414322.69
EL 697.58
top 14" HDPE

LFG HEADER STUBOUT
SEE DETAIL
C5.04 | 5

INSTALL 14" GAS VALVE ON
NEW HEADER PIPE
SEE DETAIL
C5.04 | 6

N 551459.83
E 2414255.42
EL 697.38
top 14" HDPE

SEE INSET

GV
N 551385.70
E 2414187.86
EL 697.18
14"HDPE 45 DEG. FITTING

N 551380.22
E 2414188.16
EL 697.13
top Ex 14" HDPE

INSET

REMOVE SECTION
EX 14" HDPE

REROUTE EX 6" GAS LATERAL
TAP INTO EXISTING 14" GAS
HEADER

14" HDPE SDR 17
GAS HEADER
SEE DETAIL
C5.04 | 7

GV
INSTALL GAS VALVE
SEE DETAIL C5.04 | 6

INSTALL 14" HDPE 45° ELBOW

LFG HEADER STUBOUT
SEE DETAIL
C5.04 | 5

N 551385.70
E 2414187.86
EL 697.18
14"HDPE 45 DEG.

N 551380.22
E 2414188.16
EL 697.13
top Ex 14" HDPE

EX 14" HDPE GAS HEADER

GRAPHIC SCALE
0 5 10 20
(IN FEET)
1 INCH = 10 FEET

GRAPHIC SCALE
0 25 50 100
(IN FEET)
1 INCH = 50 FEET

N

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION
1			
2			
3			
4			
5			
6			

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

LEACHATE COLLECTION & GAS SYSTEM PLAN

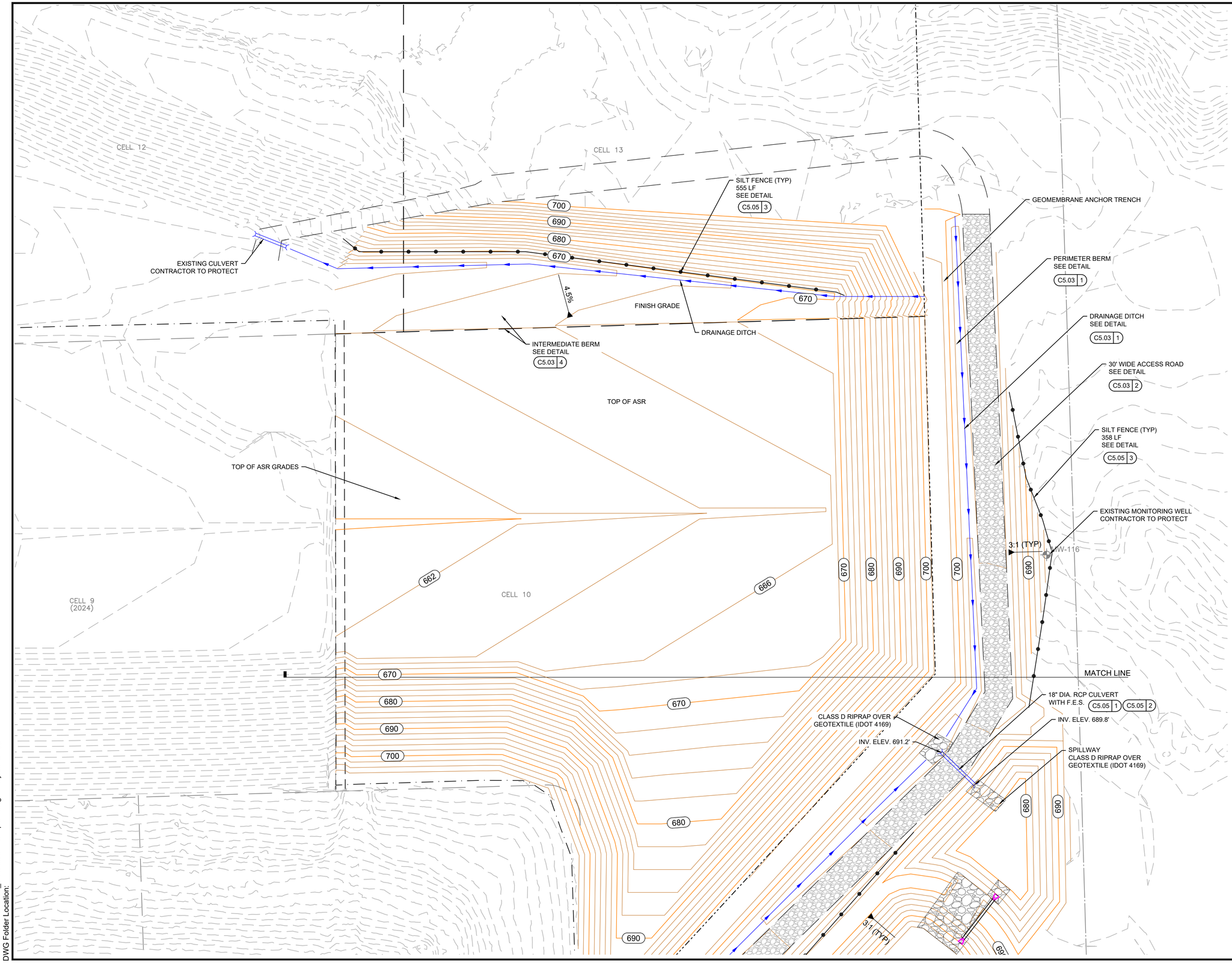
(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER

C1.04

Friday, October 17, 2025 3:01:49 PM
DWG Filename: c104_leachate plan.dwg Layout: c104
DWG Folder Location:



Friday, October 17, 2025 3:01:57 PM
DWG Filename: c105_sw erosion 1of2 plan.dwg Layout: c1.05
DWG Folder Location:

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION
1			
2			
3			
4			
5			

DATE OF PREPARATION

	BY	DATE
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DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

STORMWATER & EROSION CONTROL PLAN 1 OF 2

(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER

C1.05

CELL 9
(2024)

CELL 10

CELL 2
(1995)

662
666
670
680
690
700
708
698
676

MATCH LINE

EXISTING MONITORING WELL
CONTRACTOR TO PROTECT
MW-116

3:1 (TYP)

SILT FENCE (TYP)
SEE DETAIL
C5.05 | 3

18" DIA. RCP CULVERT
WITH F.E.S.
C5.05 | 1 C5.05 | 2

CLASS D RIPRAP OVER
GEOTEXTILE (IDOT 4169)

INV. ELEV. 689.8'

INV. ELEV. 691.2'

SPILLWAY
CLASS D RIPRAP OVER
GEOTEXTILE (IDOT 4169)

30' WIDE WEIR
687.0 FLOW ELEV
CLASS D RIPRAP OVER
GEOTEXTILE (IDOT 4169)
C5.05 | 5

PERIMETER BERM
SEE DETAIL
C5.03 | 1

DRAINAGE DITCH
SEE DETAIL
C5.03 | 1

INV. ELEV. 684.0'

INV. ELEV. 680.0'

30" DIA. RCP CULVERT
65' @ 6.15%
C5.05 | 1 C5.05 | 2

SILT FENCE (TYP)
330 LF
SEE DETAIL
C5.05 | 3

10' WIDE WEIR
687.0 FLOW ELEV
CLASS D RIPRAP OVER
GEOTEXTILE (IDOT 4169)
C5.05 | 5

SILT FENCE (TYP)
818 LF
SEE DETAIL
C5.05 | 3

30' WIDE ACCESS ROAD
SEE DETAIL
C5.03 | 2

OP-2

EXISTING MONITORING WELL
CONTRACTOR TO PROTECT

INV. ELEV. 674.0'

30" DIA. RCP CULVERT
100' @ 2%
C5.05 | 1 C5.05 | 2

15' WIDE BERM (TYP)
690.0' ELEV

INV. ELEV. 676.0'

EXISTING ACCESS ROAD

OUTLET STRUCTURE
12" ORIFICE INV = 676.0'
30" RCP PIPE INV. = 676.0'
36" RISER = 680'
C5.05 | 4

OP-14

GRAPHIC SCALE
0 25 50 100
(IN FEET)
1 INCH = 50 FEET

N

Friday, October 17, 2025 3:02:02 PM
DWG Filename: c105_sw erosion 1of2 plan.dwg Layout: c1.06
DWG Folder Location:

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
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DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

STORMWATER
& EROSION
CONTROL
PLAN 2 OF 2

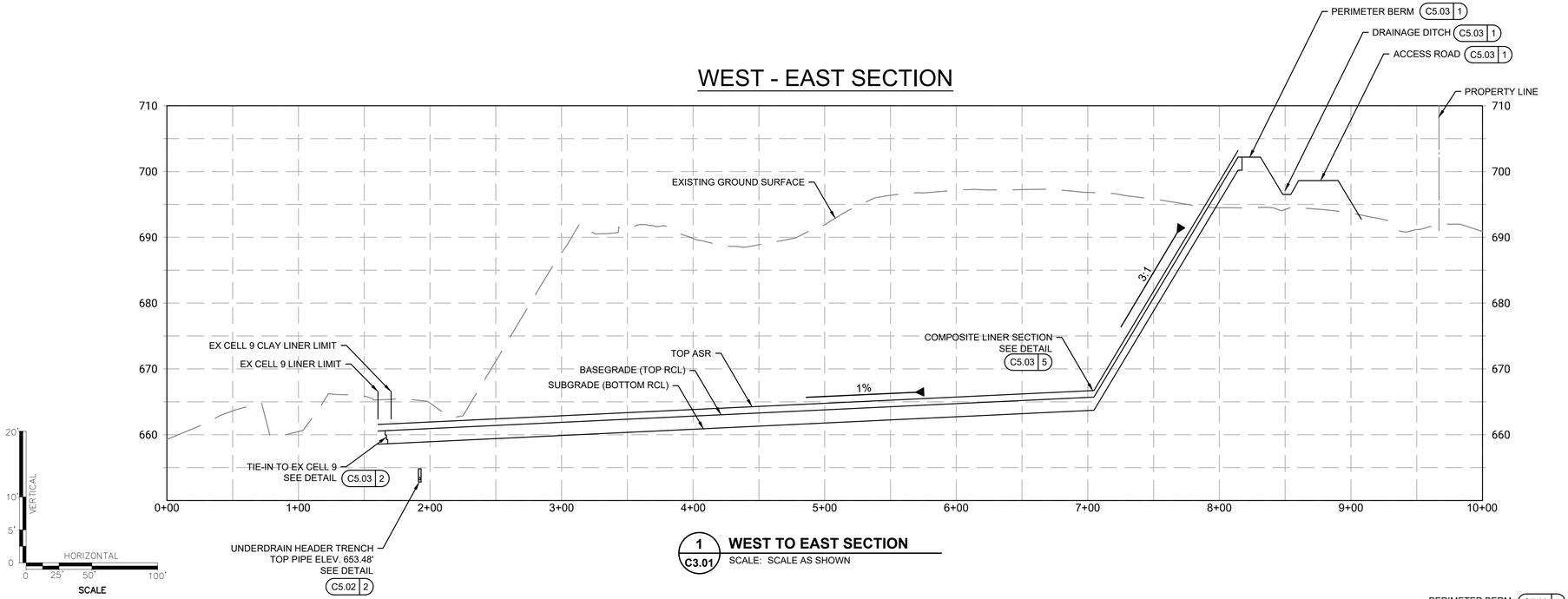
(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER

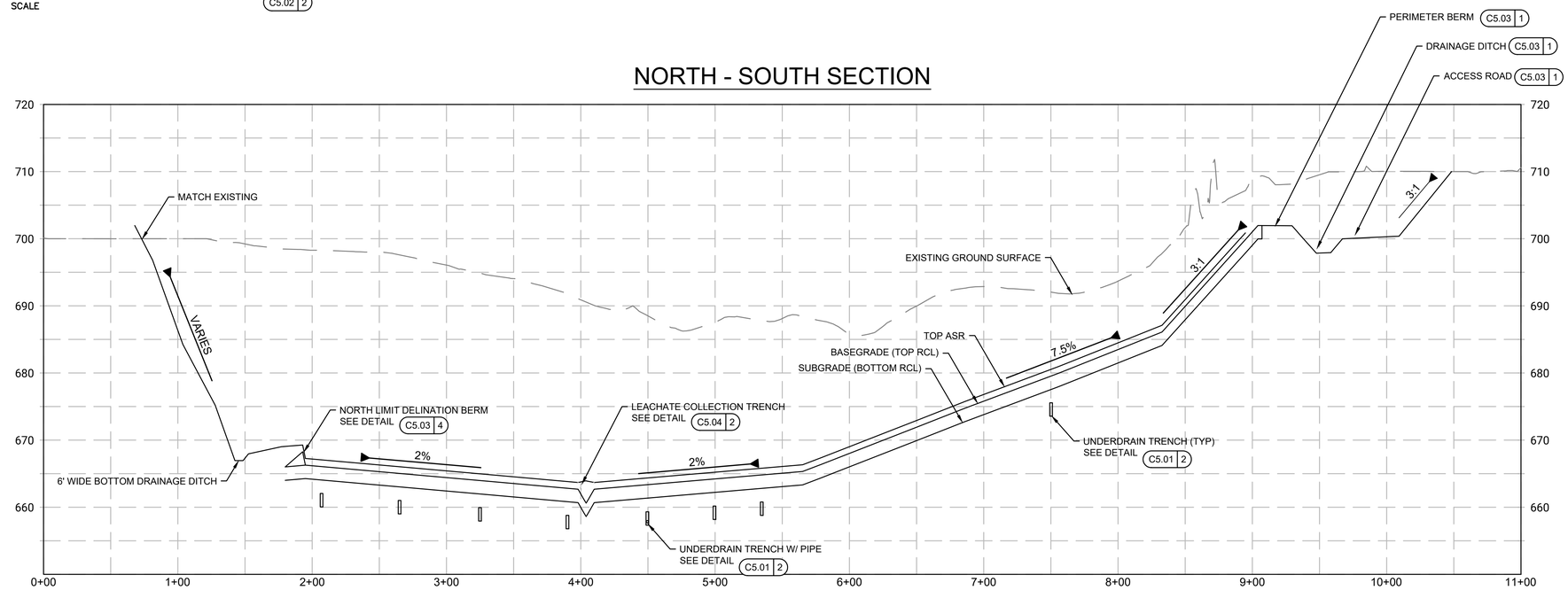
C1.06

WEST - EAST SECTION



1 / C3.01 WEST TO EAST SECTION
SCALE: SCALE AS SHOWN

NORTH - SOUTH SECTION



2 / C3.01 NORTH TO SOUTH SECTION
SCALE: SCALE AS SHOWN

NOTE:
SEE DRAWING C1.03 FOR SECTION LOCATIONS

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS NO.	DESCRIPTION	DATE	BY

DATE OF PREPARATION

	BY	DATE
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DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

ENGINEERING CROSS SECTIONS

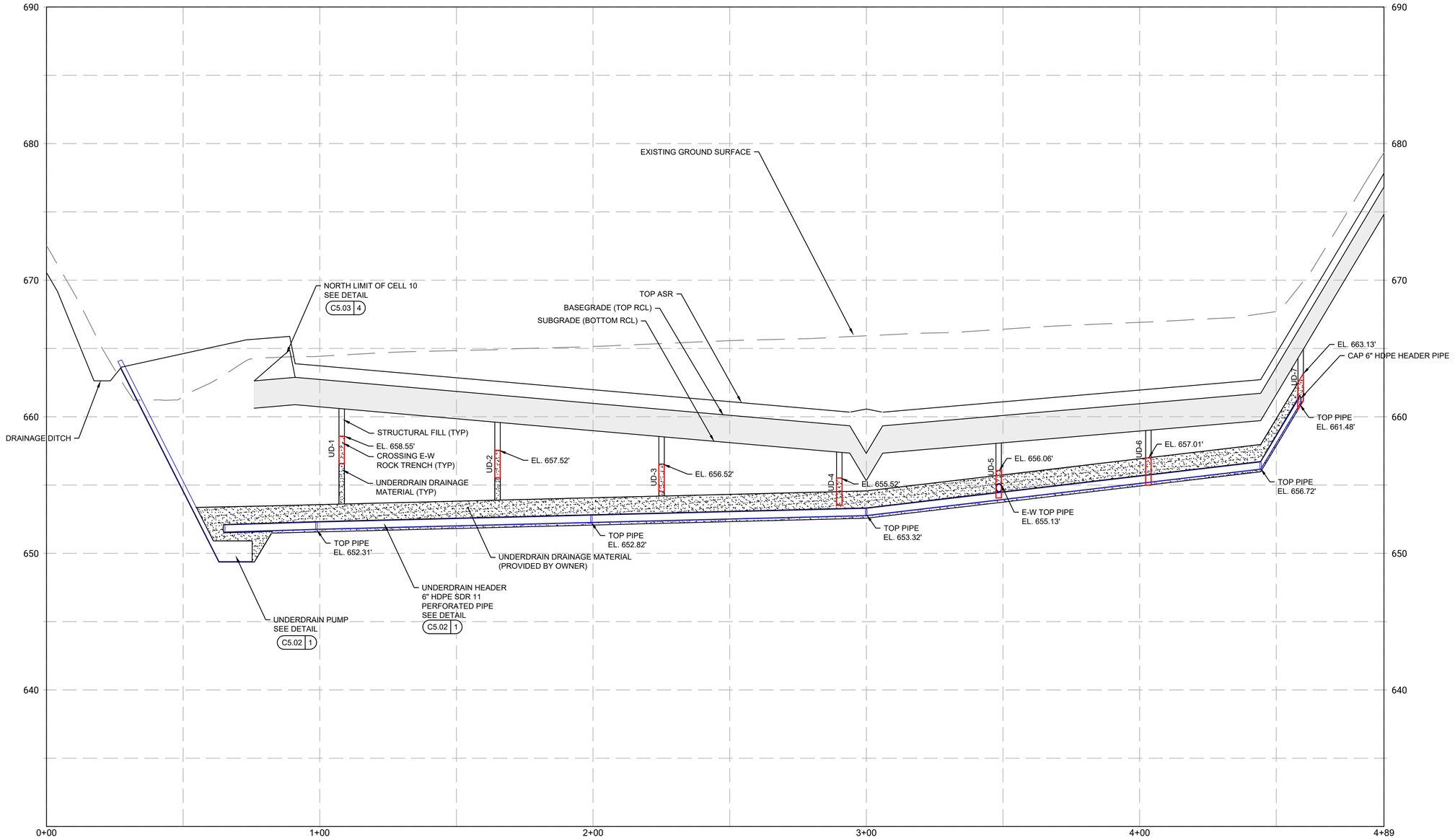
(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER
C3.01

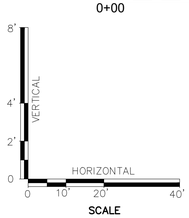
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DWG Folder Location:

UNDERDRAIN NORTH - SOUTH



1 / C3.02 UNDERDRAIN HEADER PROFILE (NORTH-SOUTH)
SCALE: SCALE AS SHOWN

NOTE:
SEE DRAWING C1.02 FOR SECTION LOCATION



Friday, October 17, 2025 3:02:12 PM
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DWG Folder Location:

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL
WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

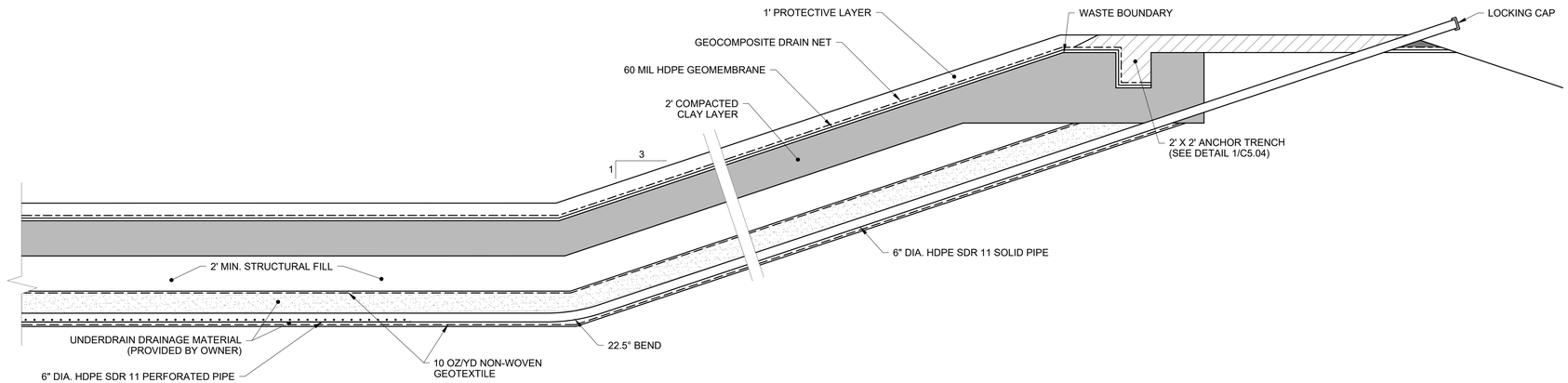
UNDERDRAIN HEADER PROFILE

(ISSUED FOR BID)

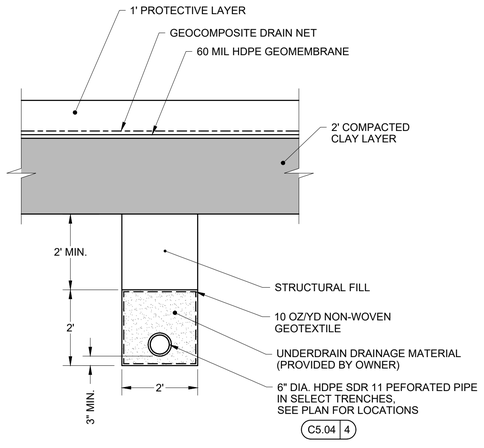
PROJECT NO: 25S040.00

SHEET NUMBER

C3.02

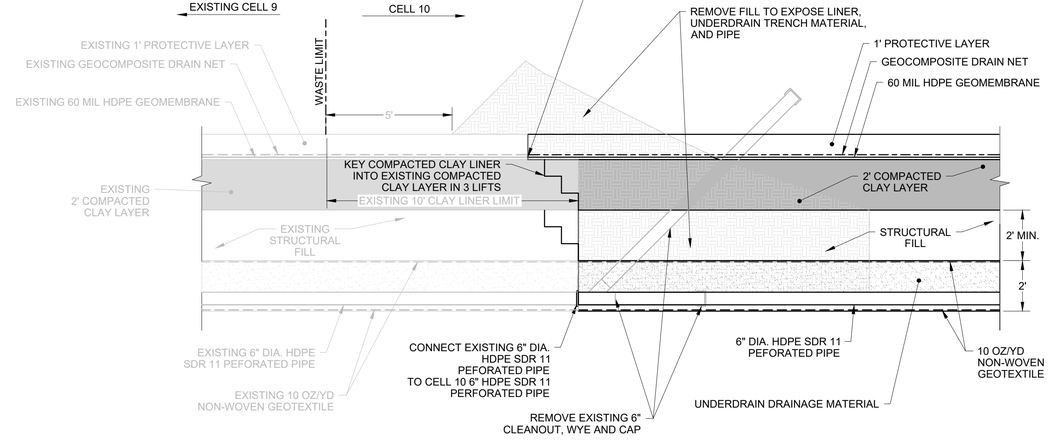


1 / C5.01 — UNDERDRAIN PIPE CLEANOUT
SCALE: 1" = 4'



NOTE:
1. SEE DRAWING C1.02 FOR THE UNDERDRAIN TRENCH LOCATIONS AND ELEVATIONS.

2 / C5.01 — SECTION VIEW UNDERDRAIN TRENCH
SCALE: 1" = 2'



NOTES:
1. REPAIRS TO EXISTING LINER SHALL BE INCIDENTAL TO LINER INSTALLATION

3 / C5.01 — CELL 10 TIE-IN TO CELL 9 UNDERDRAIN TRENCH
SCALE: 1" = 3'

NOTE:
THE FOLLOWING MATERIALS WILL BE PROVIDED BY THE OWNER:
1. LEACHATE COLLECTION MATERIAL
2. PROTECTIVE LAYER (AUTO SHREDDER RESIDUE)
3. UNDERDRAIN DRAINAGE MATERIAL

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS NO.	DESCRIPTION	DATE	BY

DATE OF PREPARATION

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SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

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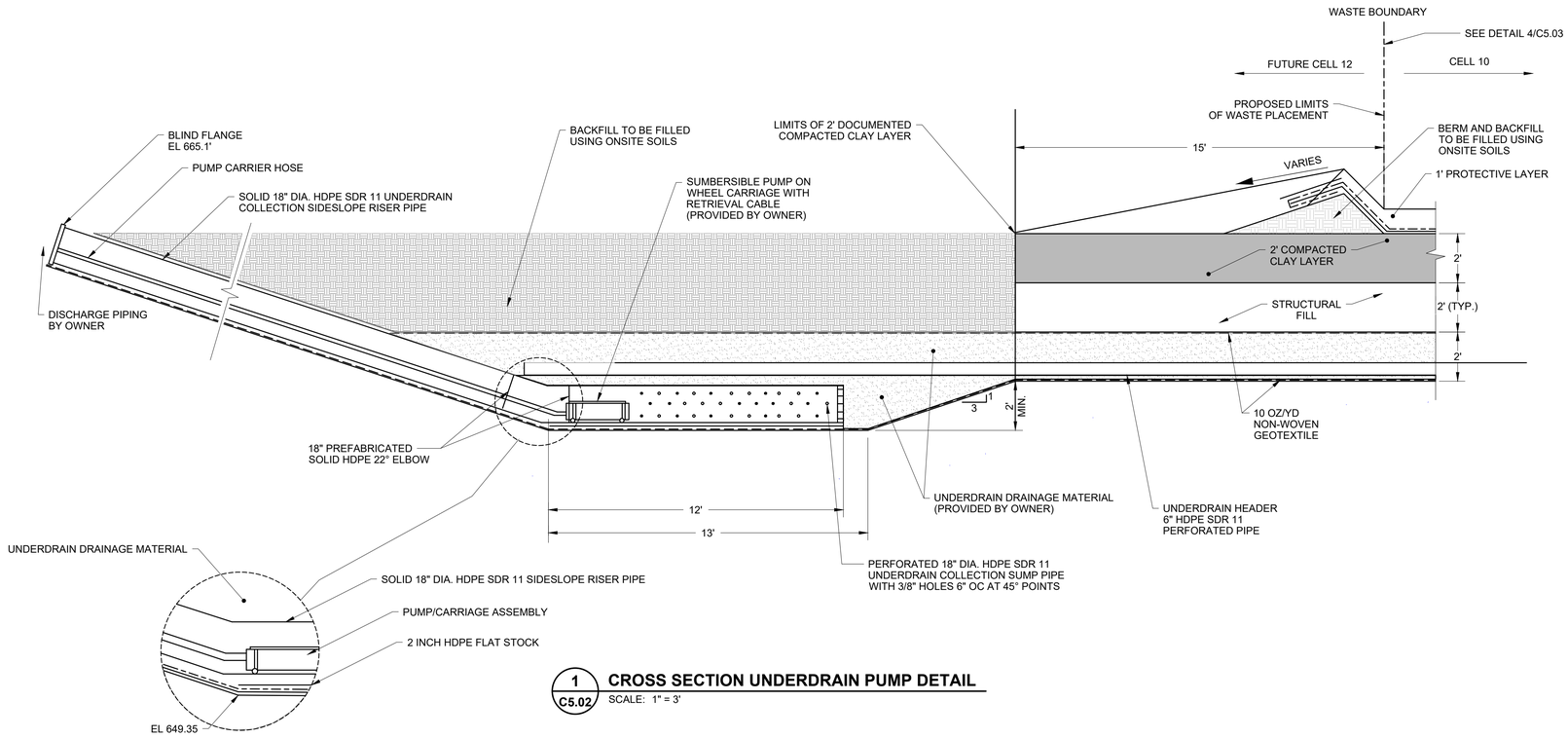
DETAILS - UNDERDRAIN

(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER
C5.01

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DWG Folder Location: C:\Clients\Waste Comm of Scott Co IA\2025\0025S047.00\CAD\Drawings\AutoCad Details\



1 / C5.02 CROSS SECTION UNDERDRAIN PUMP DETAIL

SCALE: 1" = 3'

NOTE:
THE FOLLOWING MATERIALS WILL BE PROVIDED BY THE OWNER:

1. LEACHATE COLLECTION MATERIAL
2. PROTECTIVE LAYER (AUTO SHREDDER RESIDUE)
3. UNDERDRAIN DRAINAGE MATERIAL

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

DETAILS - UNDERDRAIN

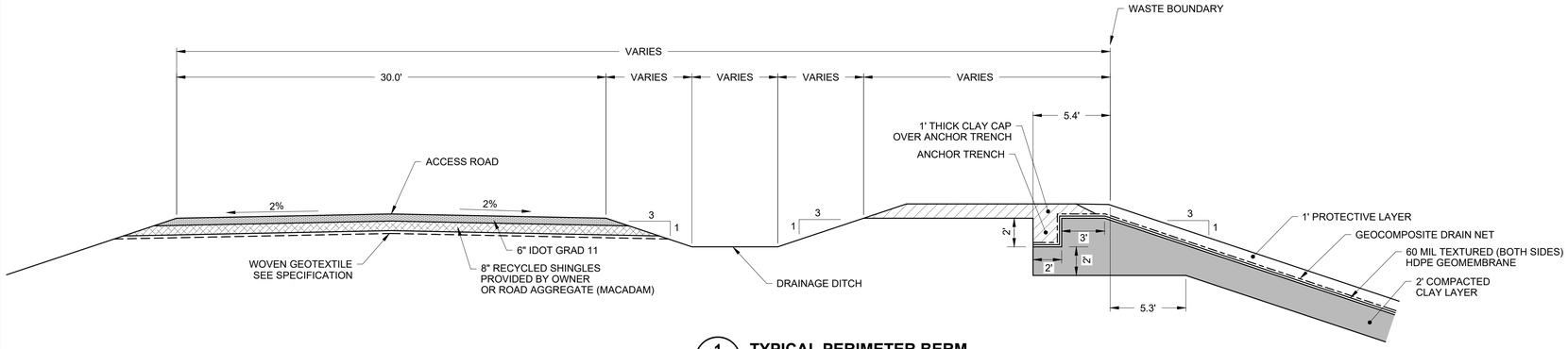
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PROJECT NO: 25S040.00

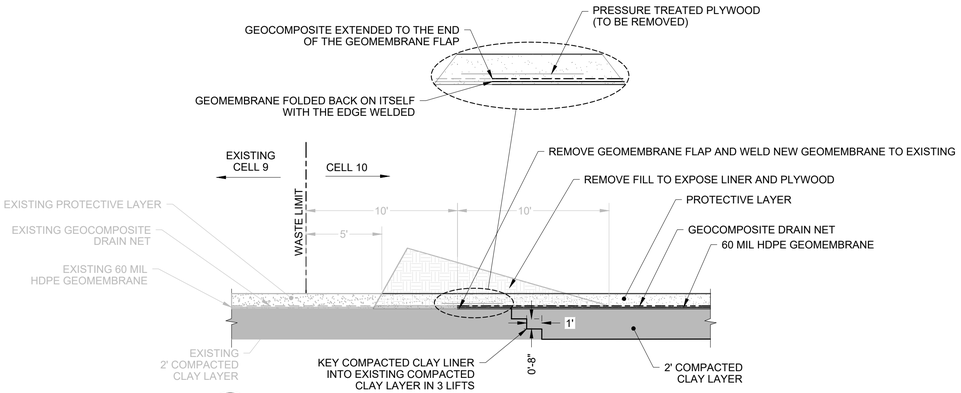
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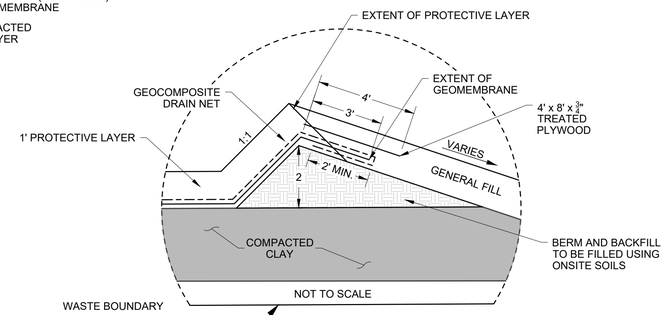
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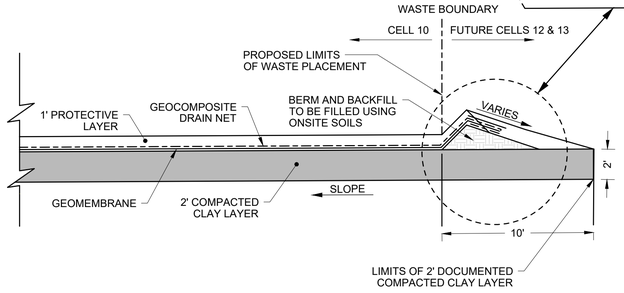


1 / C5.03 TYPICAL PERIMETER BERM
SCALE: 1" = 5'

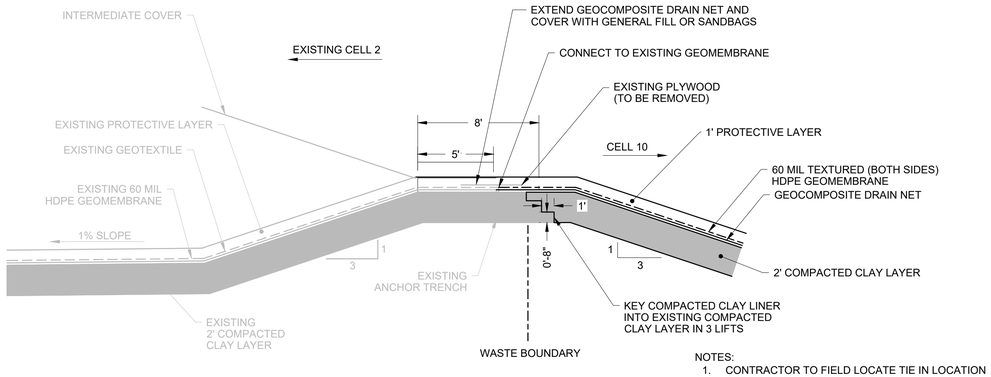


2 / C5.03 TIE-IN TO EXISTING CELL 9/TO CELL 10
SCALE: 1" = 5'



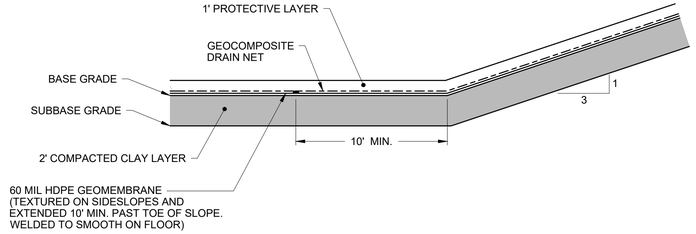


4 / C5.03 NORTH LIMIT OF CELL 10/ FUTURE TIE-IN TO CELLS 12 & 13
SCALE: 1" = 5'



NOTES:
1. CONTRACTOR TO FIELD LOCATE TIE IN LOCATION
2. REPAIRS TO EXISTING LINER SHALL BE INCIDENTAL TO LINER INSTALLATION
3. WASTE RELOCATION TIE INTO CELLS 2 & 9 SHALL BE INCIDENTAL TO LINER INSTALLATION

3 / C5.03 NORTH LIMIT OF CELL 2/ TIE-IN TO CELL 10
SCALE: 1" = 5'



5 / C5.03 COMPOSITE LINER SECTION (BOTTOM)
SCALE: 1" = 5'

NOTE:
THE FOLLOWING MATERIALS WILL BE PROVIDED BY THE OWNER:
1. LEACHATE COLLECTION MATERIAL
2. PROTECTIVE LAYER (AUTO SHREDDER RESIDUE)
3. UNDERDRAIN DRAINAGE MATERIAL

Foth

CONSTRUCTION DRAWINGS FOR CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION
1			
2			
3			
4			
5			
6			

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

DETAILS - LINER

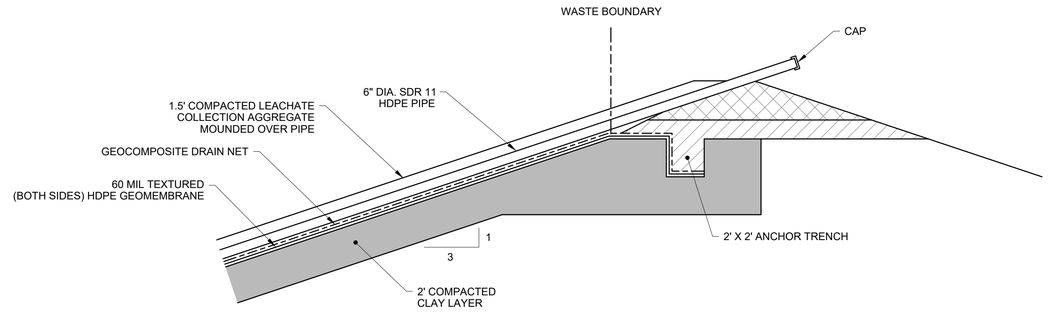
(ISSUED FOR BID)

PROJECT NO: 25S040.00

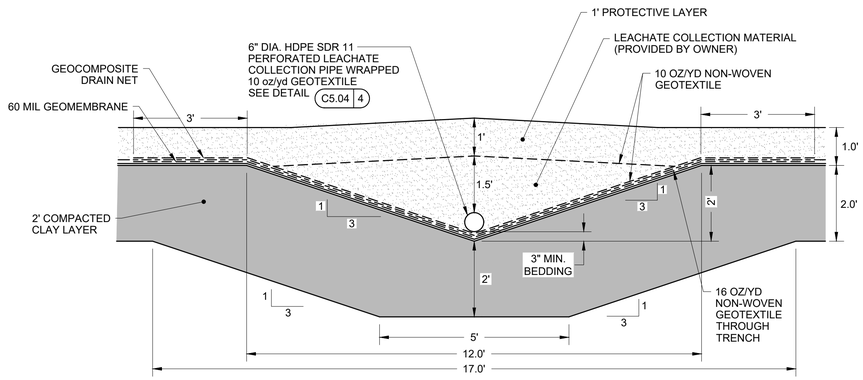
SHEET NUMBER

C5.03

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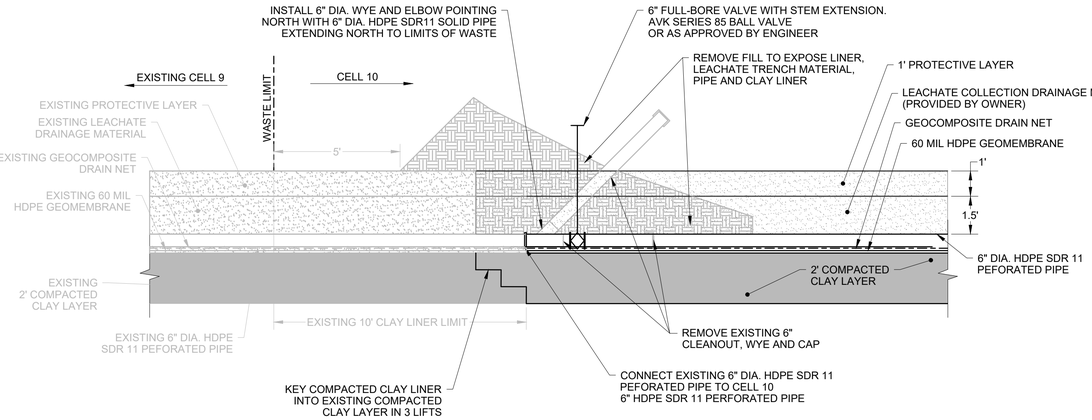


1 / C5.04 — TYPICAL CLEANOUT
SCALE: 1" = 4'



NOTE:
THE 2 - 10 OZ/YD NON-WOVEN GEOTEXTILE LAYERS SHALL BE SECURED TO EACH OTHER.

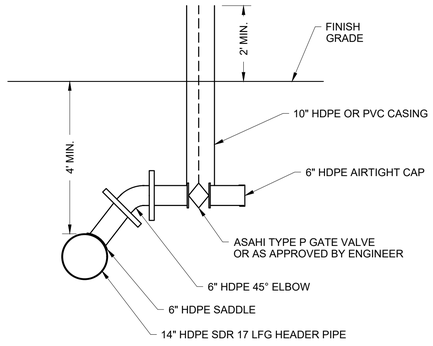
2 / C5.04 — LEACHATE COLLECTION TRENCH
SCALE: 1" = 2'



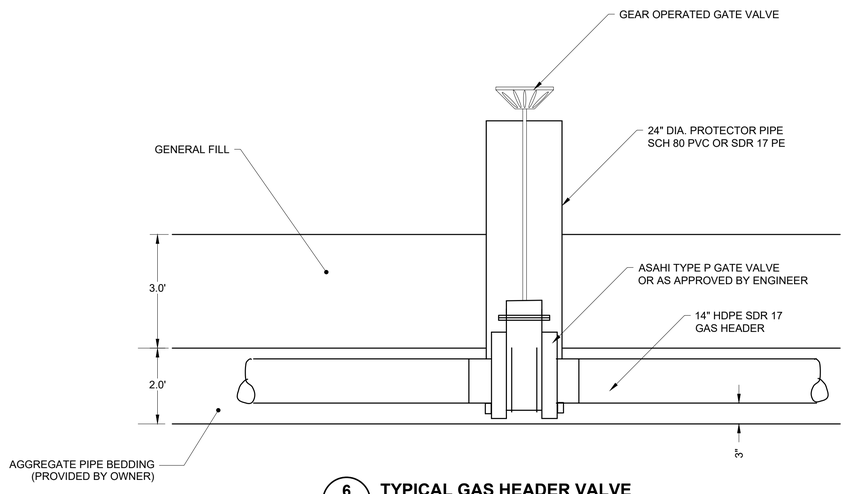
3 / C5.04 — TIE-IN TO CELL 9 LEACHATE COLLECTION TRENCH
SCALE: 1" = 3'



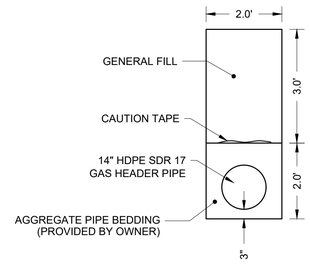
4 / C5.04 — TYPICAL UNDERDRAIN & LEACHATE COLLECTION PIPE
SCALE: NOT TO SCALE



5 / C5.04 — TYPICAL LANDFILL GAS HEADER STUBOUT DETAIL
SCALE: 1" = 2'



6 / C5.04 — TYPICAL GAS HEADER VALVE
SCALE: NOT TO SCALE



7 / C5.04 — TYPICAL GAS HEADER PIPE BEDDING
SCALE: NOT TO SCALE

NOTE:
THE FOLLOWING MATERIALS WILL BE PROVIDED BY THE OWNER:
1. LEACHATE COLLECTION MATERIAL
2. PROTECTIVE LAYER (AUTO SHREDDER RESIDUE)
3. UNDERDRAIN DRAINAGE MATERIAL

Foth

CONSTRUCTION DRAWINGS FOR
CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY
DAVENPORT, IOWA

REVISIONS			
NO.	BY	DATE	DESCRIPTION

DATE OF PREPARATION

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DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

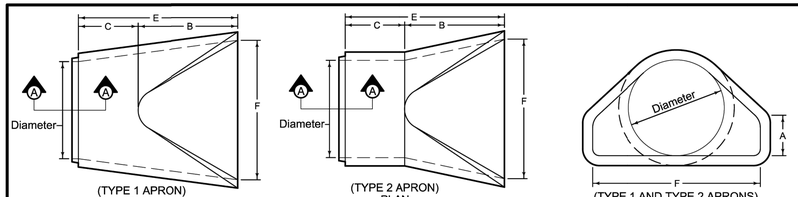
DETAILS - LEACHATE COLLECTION

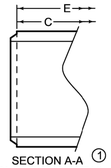
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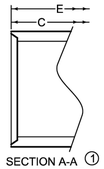
PROJECT NO: 25S040.00

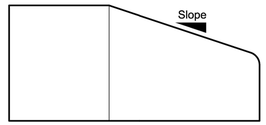
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Dimension 'E' shown is the minimum and is considered the design length. Adjust for any difference between the actual length of concrete apron installed and the length indicated below for the length of concrete culvert pipe furnished.

1 Tongue end used on inlet end section. Groove end used on outlet end section.

TYPE 1 APRONS

DIAM.	SLOPE	A	B	MINIMUM C	MINIMUM E	F
12"	2.4:1	4"	2'-0"	4'-4 3/8"	6'-2 5/8"	2'-0"
15"	2.4:1	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	2.3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	2.4:1	9"	3'-0 "	3'-11 1/2"	6'-1 5/8"	3'-5"
24"	2.5:1	9 1/2"	3'-7 7/8"	2'-6"	6'-1 5/8"	4'-0"
27"	2.5:1	10 1/2"	4'-1 "	2'-0"	6'-1 5/8"	4'-4"
30"	2.5:1	12"	4'-6"	1'-7 7/8"	6'-1 5/8"	5'-0"
36"	2.5:1	15"	5'-3"	2'-9"	8'-0"	6'-0"
42"	2.5:1	21"	5'-3"	2'-9"	8'-0"	6'-6"
48"	2.5:1	24"	6'-0"	2'-0"	8'-0"	7'-0"
54"	1.8:1	27"	5'-0"	3'-0"	8'-0"	7'-6"
60"	1.6:1	29 1/2"	5'-0"	3'-0"	8'-0"	8'-0"
66"	1.7:1	30"	6'-0"	2'-3"	8'-3"	8'-0"
72"	1.6:1	30"	6'-6"	1'-9"	8'-3"	9'-0"
78"	1.8:1	36"	7'-5"	1'-9"	9'-3"	9'-6"
84"	1.3:1	29 1/2"	8'-9"	2'-5 1/2"	9'-3 1/2"	10'-0"

TYPE 2 APRONS

DIAM.	SLOPE	A	B	MINIMUM C	MINIMUM E	F
12"	2.4:1	4"	2'-0"	4'-4 3/8"	6'-2 5/8"	2'-0"
15"	2.4:1	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	2.3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	2.4:1	9"	3'-0"	3'-11 1/2"	6'-1 5/8"	3'-5"
24"	2.5:1	9 1/2"	3'-7 7/8"	2'-6"	6'-1 5/8"	4'-0"
27"	2.5:1	10 1/2"	4'-1 "	2'-0"	6'-1 5/8"	4'-4"
30"	2.5:1	12"	4'-6"	1'-7 7/8"	6'-1 5/8"	5'-0"
36"	2.5:1	15"	5'-3"	2'-9"	8'-0"	6'-0"
42"	2.5:1	21"	5'-3"	2'-9"	8'-0"	6'-6"
48"	2.5:1	24"	6'-0"	2'-0"	8'-0"	7'-0"
54"	1.9:1	24 3/4"	5'-5"	2'-7"	8'-0"	7'-6"
60"	1.4:1	24 3/4"	5'-0"	3'-0"	8'-0"	8'-0"
66"	1.7:1	30"	6'-0"	2'-3"	8'-3"	8'-0"
72"	1.4:1	24"	6'-6"	1'-9"	8'-3"	9'-0"
78"	1.8:1	36"	7'-6"	1'-9"	9'-3"	9'-6"
84"	1.5:1	23 1/2"	7'-6 1/2"	1'-9"	9'-3 1/2"	10'-0"

SUDAS

REVISION: New 10-18-16

4030.222

SHEET 1 of 1

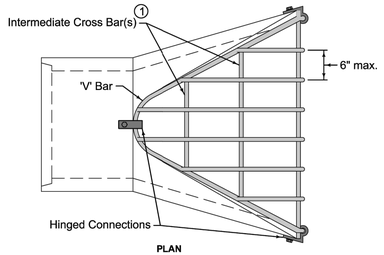
SUDAS Standard Specifications

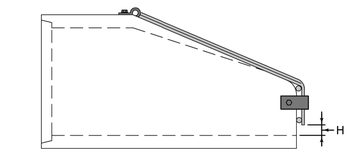
CIRCULAR CONCRETE APRONS

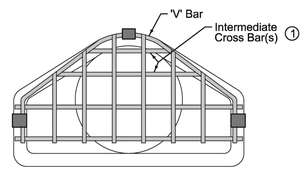
FIGURE 4030.222 | SHEET 1 OF 1

1 C5.05 TYPICAL CONCRETE APRON DETAIL

SCALE: NONE







Provide guard dimensions to fit with type of apron provided. Ensure 'V' Bar completely rests on apron.

1 All guards must include at least one intermediate cross bar. If pipe diameter, or equivalent diameter, is 60 inches or greater, use two intermediate cross bars equally spaced.

ROUND PIPE SIZE	ROUND H	ARCH EQUIVALENT DIAMETER	ARCH H	ELLIPTICAL EQUIVALENT DIAMETER	ELLIPTICAL H
12"	2 1/2"	18" to 24"	4"	18"	3"
15"	3"	30" to 36"	5"	24"	4"
18" - 24"	4"	42" to 54"	6"	30" to 36"	5"
27" - 36"	5"	60" to 72"	7"	42" to 54"	6"
42" - 54"	6"			60"	7"
60" - 72"	7"				
78" - 90"	8"				

BAR SIZES

	PIPE SIZE (DIA. or EQUIV.)	HOLE DIA. REQ'D.	BOLT DIA.	BAR SIZE
ROUND	12" - 24"	3/4"	5/8"	#6
	27" - 48"	7/8"	3/4"	1"
	54" - 90"	1 1/8"	1"	1 1/4"
ARCH	up to 24" eq.	3/4"	5/8"	#6
	30" to 48"	7/8"	3/4"	1"
	54" to 72"	1 1/8"	1"	1 1/4"
ELLIPTICAL	up to 24" eq.	3/4"	5/8"	#6
	30" to 48"	7/8"	3/4"	1"
	54" to 60"	1 1/8"	1"	1 1/4"
BOLT LENGTH = PIPE WALL THICKNESS + 2 1/2"				

SUDAS

REVISION: New 10-18-16

4030.224

SHEET 1 of 1

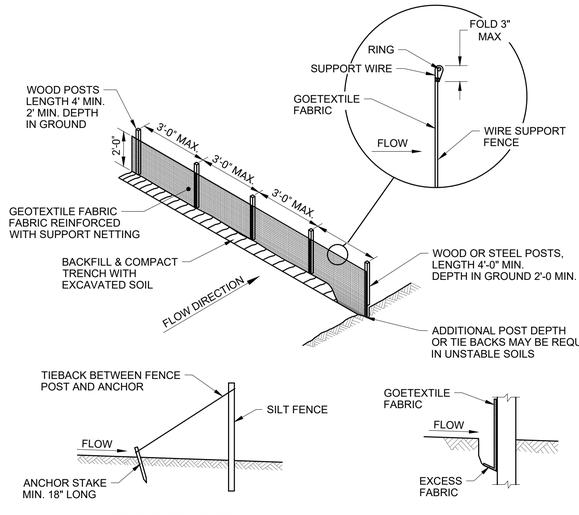
SUDAS Standard Specifications

CONCRETE PIPE APRON GUARD

FIGURE 4030.224 | SHEET 1 OF 1

2 C5.05 TYPICAL CONCRETE PIPE APRON GUARD DETAIL

SCALE: NONE

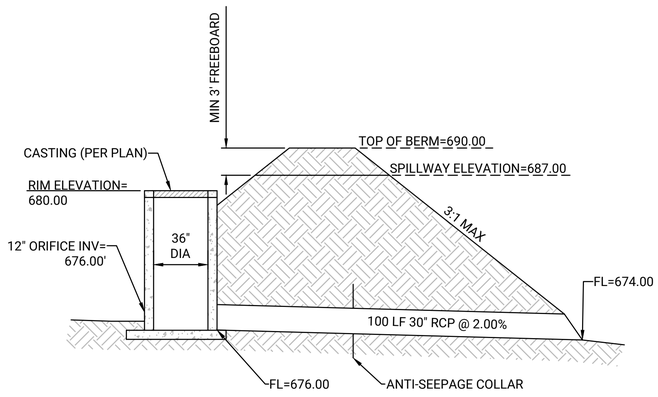


NOTE:

1. ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS.

3 C5.05 TYPICAL SILT FENCE AND TRENCH

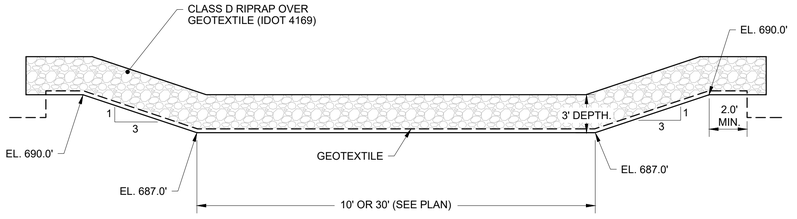
SCALE: NONE



CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OUTLET CONTROL STRUCTURES

4 C5.05 OUTLET STRUCTURE DETAIL

SCALE: NONE



5 C5.05 STORMWATER WEIR DETAIL

SCALE: NONE

Foth

CONSTRUCTION DRAWINGS FOR CELL 10 OF SCOTT AREA LANDFILL

WASTE COMMISSION OF SCOTT COUNTY DAVENPORT, IOWA

NO.	BY	DATE	DESCRIPTION

REVISIONS

DATE OF PREPARATION

	BY	DATE
SURVEYED	SHIVE	MARCH 2025
DRAWN	CKV/JOW	OCT 2025
DESIGNED	CKV	OCT 2025
CHECKED	ASL/NOK	OCT 2025

SHEET TITLE:

DETAILS - STORMWATER

(ISSUED FOR BID)

PROJECT NO: 25S040.00

SHEET NUMBER

C5.05

Friday, October 17, 2025 3:02:37 PM
DWG Filename: cell 10-all details.dwg Layout: c505
DWG Folder Location: Clients\Waste Comm of Scott Co IA\2025\0025S047.00\CAD\Drawings\AutoCad Details\